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ABSTRACT

The effectiveness of school-to-work (STW) in Wisconsin was examined through a review of the data from the following sources: STW implementation reports; follow-up surveys of youth apprenticeship graduates, parents, and employers; and telephone interviews with curriculum directors from 45 Wisconsin school districts. Of the practices and innovative activities planned for K-12 students as part of Wisconsin's STW program, school-based activities have generally been implemented far more broadly than work-based activities. Because participation rates in core, work-based learning experiences have been very low, the aggregate impact of STW on workforce development and the state's economy has been necessarily meager. Since Wisconsin launched STW, the two main problems it was intended to address have changed. Wisconsin's system for curriculum standards and assessment now drives efforts to improve academic learning, and the state's economy has rebounded. It was, therefore, recommended that the Wisconsin Legislative Fiscal Bureau conduct an evaluation of STW in light of STW program goals and other state priorities, pursuant to a zero-based budget decision about the program's future. It was further recommended that STW be implemented on small scales at the district level. (The report contains 46 references. Appended is a list of the curriculum directors interviewed.) (MN)

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SCHOOL TO WORK IN WISCONSIN

Inflated Claims, Meager Results

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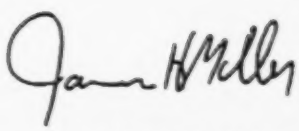
REPORT FROM THE PRESIDENT:

In June of 1997, Professors Mark Schug and Richard Western from the School of Education at the University of Wisconsin-Milwaukee issued a report examining current teacher training in Wisconsin. They reported that only one out of three graduates from our education schools were finding jobs teaching in our state. The educational bureaucracy erupted in a torrent of criticism. A spokesman for the Department of Public Instruction labeled this study as "typical, WPRI poppycock." In November of 1998 DPI issued a controversial report saying that only 32% of people who received teacher's licenses in 1996-97 were working as full-time teachers in the Wisconsin public schools the following year.

As usual the bureaucratic criticism of our research had nothing to do with reality.

For the past year, Professors Schug and Western have been examining Wisconsin's School to Work programs. Once again their findings will be controversial; criticized by education bureaucrats; and accurate. Between 1991-1998, federal and state spending on School to Work in Wisconsin totaled $195.4 million, of this amount ninety-six percent came from federal sources. The actual results are startling. While only 1,150 students participated in the apprenticeship programs, just 347 completed their program. While many Wisconsin school children did participate in classroom-based job and career awareness programs, there is little evidence that School to Work has had any impact at all on Wisconsin's future work force. The state has not tried to evaluate any of the outcomes from this money, nor does it give any indication that it will have any future impact on Wisconsin's changing economy.

As with most bureaucratic educational reforms, School to Work sounds terrific, but in reality it is all style with absolutely no substance. This is a program that could contribute enormously to Wisconsin's growth, but without some serious changes, none of this is likely to happen in the future.



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SCHOOL TO WORK IN WISCONSIN:

Inflated Claims, Meager Results

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EXECUTIVE SUMMARY

Late in the 1980s, according to a consensus view, Wisconsin's young people were not being prepared well, academically or in work-related skills, for workforce participation. A major policy response seemed to be in order. The re-examination that followed produced what we now know as school-to-work (hereafter, STW). The STW reform goal is to upgrade the preparation of Wisconsin's young people for high-wage, high-skill careers. The goal is to be realized through an array of school-based and work-based learning programs, coordinated to emphasize high academic standards and work-related skills and attitudes.

STW in Wisconsin is administered by three state agencies, interacting with local school districts and consortia. Funding derives primarily from federal and state sources (local districts also support some STW activity). From 1991 to 1998, federal and state spending on STW in Wisconsin totaled $195.4 million. Of this amount, 96 percent came from federal sources.

Wisconsin STW policy, reflecting the federal School-to-Work Opportunities Act of 1994, declares broad reform goals for the education of all K-12 students through STW innovations. The goals include improved motivation, improved academic learning, improved work-related skills and attitudes, and improved access to employment opportunities. The STW innovations include career awareness programs, articulated technical studies, apprenticeship and other work-based programs, and teaching and learning enhanced by a new emphasis on integrated learning as it occurs in out-of-school situations.

Of the STW practices in question, school-based activities have generally been implemented far more broadly than work-based activities. Many Wisconsin schoolchildren have participated in classroom-based career awareness activities, for example. But between 1992 and 1996/97, only 1150 students have participated in apprenticeship programs; and, of these, only 347 have completed their programs. These apprenticeship graduates represent about .001 of Wisconsin's 1994-95 high school student population and about .0001 of Wisconsin's 1996 workforce.

Because participation rates in core, work-based learning experiences have been very low, the aggregate impact of STW on workforce development and the state's economy is necessarily meager. (The impact for some individuals, of course, has been strong and positive.) If all 347 recent apprenticeship graduates had found work immediately after high school graduation, for example, and if all had jumped immediately to earning an average Wisconsin wage, their total STW wage-increment would account for less than one one-thousandth of the money flow generated by total wages earned in the state. This calculation is based on best-case assumptions; if actual salary figures were available for use, the aggregate impact would most likely be smaller still.

While it is possible to estimate that the impact of STW on wages and the flow of money in Wisconsin's economy has been very small, nothing at all can be said about the impact of STW on the academic learning of K-12 students. STW may have improved learning for some students and depressed learning for others, but no reliable evidence exists for either possibility. That is because, despite the emphasis on high academic standards that has marked STW advocacy from the outset, Wisconsin's STW program has not included an evaluation component aimed at assessing effects on learning. Money available for program evaluation has been allocated for assessing STW implementation, not outcomes. Nor has STW been linked to Wisconsin's recently developed curriculum standards and assessment system. STW is in this respect an anomaly, unable to generate evidence related to its own academic goals and disconnected from the state's principal academic initiative.

In the time it has taken the state to launch STW, the two main problems it was intended to address have changed. Wisconsin's system for curriculum standards and assessment now drives efforts to improve academic learning in the state's K-12 schools. And Wisconsin's economy has rebounded, led by growth in manufacturing and agriculture, such that employers in 1999 generally face a labor shortage. Given the record of meager STW effects, and given these changes in the economy and in the state's approach to academic reform, it is by no means clear that STW would emerge as Wisconsin's reform policy of choice if it were broached as a new proposal in 1999.

Our recommendation, therefore, is that:

The Wisconsin Legislative Fiscal Bureau should conduct an evaluation of STW in light of STW program goals and other state priorities, pursuant to a zero-base budget decision about the program's future. Core STW activities could perhaps be incorporated effectively in a different initiative — one more sharply focused on work-related learning and more compatible with Wisconsin's K-12 academic goals.

In the event of a decision to continue the program in some fashion, we recommend that policy and practice be informed by the following guidelines:

At the district level, do STW small. STW has not served well as an omnibus approach to the reform of K-12 programs generally, and it is not likely to do so in the future. As one program among others in a given district's

offerings, however, STW is potentially valuable to some students.

Emphasize articulated technical studies and work-based learning. These core STW programs connect K-12 students with norms and practices outside the K-12 world, thus creating the STW potential for adding value to the K-12 experience.

Protect the academic curriculum. Schools never have solved the problem of what to do with disaffected students by turning away from academic goals. College-bound students and others respond to quality programs and incentives for learning.

Build STW activity into an evaluation plan. The benefits of STW can be ascertained only by developmental activity in which well-defined program features are identified at the outset, early implementation is monitored closely, and program effects are assessed in light of academic and work-related goals.

Take people's objections to STW seriously and try to learn from them. Objections from parents and teachers may highlight important difficulties. When that is so, the difficulties will continue to perturb the program or activity in question even if the objections are dismissed as obstructive.

Let demand for STW services drive expansion of STW programming. It should not be necessary to rely on the hard sell in order to promote STW. If educators would concentrate instead on developing STW programs that people in the respective school districts want for their children, then STW programming would expand legitimately and without a struggle, in response to demand.

ABBREVIATIONS

DILHR	The Wisconsin Department of Labor, Industry, and Human Relations (now DWD)
DPI	The Wisconsin Department of Public Instruction
DWD	The Wisconsin Department of Workforce Development (formerly DILHR)
K-8	Kindergarten through grade 8
K-12	Kindergarten through grade 12
MPS	The Milwaukee Public Schools
STW	School to Work
STWOA	The School-to-Work Opportunity Act (Public Law 103-239)
Tech Prep	Technical preparation programs with courses of study articulated between high schools and postsecondary schools
WTCS	The Wisconsin Technical College system

INTRODUCTION

The school-to-work idea (hereafter, STW) emerged in Wisconsin late in the 1980s. Building in part on earlier initiatives, it has evolved into a complex system of education policy and practice intended to institutionalize and foster the development of a particular vision of reform. The reform goal, for K-12 education and workforce development in the state, is to upgrade the preparation of Wisconsin's young people for high-wage, high-skill careers in the global economy. The goal is to be achieved through an array of programs for school-based learning, work-based learning, and what are called connecting activities, configured and coordinated to emphasize high academic standards and work-related skills and attitudes that will enable young people to respond flexibly and resourcefully to fast-paced developments in the labor markets.

In its assumptions about the goals of public education, the STW idea is not new. Throughout the industrial era, educators, parents, and other citizens concerned themselves with questions about how the schools ought to serve broad social goals, and school districts developed vocational and career education programs in their efforts to serve the needs of prospective workers and employers. By the middle- and late-1980s, however, this familiar tradition of school policy and practice seemed in need of a major overhaul, given two overlapping problem areas that loomed large in the state. One problem area had to do with Wisconsin's workforce; the other had to do with the K-12 schools. Performance in each area looked unsatisfactory, according to a consensus view. A coordinated policy response seemed to be in order. The reexamination and developmental activity that followed produced what we now know as STW in Wisconsin.

THE WORKFORCE DEVELOPMENT PROBLEM

Twenty years ago, Wisconsin's economy looked bleak. Oil prices were rising steeply and mortgages on family farms were being foreclosed. Heavy competition emerged for the U. S. automobile industry, eroding Wisconsin's manufacturing base. American Motors was sold to Chrysler. Plants closed. Wisconsin came to be known as part of the Rust Belt. Many older workers languished; younger ones, hit hard by a shifting market for skills, faced declining real incomes. Many moved, or talked about moving, to Sun Belt locations.

In this climate, fear of impending economic obsolescence prompted leaders in business and education to reexamine Wisconsin's education system in light of emerging needs. The vocational and agricultural education programs associated with an earlier era now seemed inadequate; it would not do merely to update them. Nor would it do merely to encourage more and more high school graduates to continue their studies in college and university programs. College and university studies seemed to be a poor choice for many young people, as evidenced by the fact that many who enrolled in baccalaureate programs never finished them, while many who did graduate found themselves lacking skills demanded in the labor markets.

Reflecting this view, the Wisconsin state legislature in 1987 approved an Education for Employment standard, requiring that all students in grades K-12 have access to an education-for-employment program. Such programs were to be infused throughout the K-12 curriculum, not set aside for students in a vocational track. They would provide an array of services including career exploration and planning, instruction in labor market skills and attitudes, and work experience. Teacher training programs would be augmented to prepare all new teachers for participation in Education for Employment.

The Education for Employment Act represented an effort to move beyond traditional vocational programs, but it emphasized in-school activity, to be designed and implemented largely by K-12 educators. After assessing Wisconsin's education and workforce needs, the Commission on Schools for the 21st Century (1990) envisioned a more far-reaching set of initiatives including some aimed at linking in-school efforts more deliberately to sources of influence in the labor market. In a report featuring 168 recommendations, the Commission called for new partnerships between businesses and schools, the creation of youth apprenticeship programs, and a tech-prep program to improve coordination of K-12 curricular requirements with those of the state's technical colleges. Subsequent studies — by the Joint VTAE Task Force on Implementing Occupational Options (1991), by the Governor's Commission for a Quality Workforce (1991), and the Governor's Cabinet for a Quality Workforce (1991-1993) — emphasized similar priorities.

These developments in Wisconsin paralleled an agenda evolving concurrently at the national level. Early on, the Clinton administration identified job training as a national priority, initially assigning Labor Secretary Robert Reich the task of developing and winning support for publicly supported programs of skill enhancement. Reich sought to draw upon a prior consensus in social science and policy circles about the need to upgrade the nation's skills

(Heckman, 1994, p. 91). The consensus view as summarized earlier in a report of the Commission on the Skills of the American Workforce (1990) held that bold new programs were needed to cope with a set of urgent problems: growing inequality in wages and incomes, especially among the young; a decline in the quality of the workforce, with productivity problems linked to skills and motivational shortcomings among employees; and an upper limit on our capacity to improve workforce productivity merely by investment in physical capital and machinery. In what some referred to as a Third Industrial Revolution, said then to be underway, mass production and specialization would diminish in importance, and enhanced productivity would depend increasingly on human capital — on highly trained workers.

The U.S. Department of Labor contributed to the development of the consensus view, issuing in 1991 a report from the Secretary's Commission on Achieving Necessary Skills (U. S. Department of Labor, 1991). The SCANS report emphasized the importance of basic skills in mathematics, reading, writing, listening, and speaking. It also stressed thinking skills and the importance of work-related personal qualities including responsibility, self-esteem, sociability, and honesty. In a synthesis of these skills and personal qualities it listed several competencies deemed necessary for workers in the emerging labor market; the competencies emphasized interpersonal skills, information skills, and technology skills.

In response to recommendations associated with this consensus view, President Clinton introduced plans for expanding the Summer Youth and Employment Training Program, the Trade Adjustment Assistance Program, the Economic Dislocation and Worker Adjustment Assistance Program, and the Job Corps. In addition, as a new initiative, the President proposed establishment of a nationwide system of youth apprenticeship programs to provide school- and work-based learning for young people not planning to attend college (Heckman, 1994, pp. 99-100).

The argument for youth apprenticeship programs derived support from a widespread view that the transition from school to work in the American labor market is generally chaotic. Observers asserting this view pointed to large numbers of poorly educated young people who could be seen wasting time and money in what seemed to be aimless activity — working at low-grade jobs and dabbling at college or university programs for which many were ill-qualified (see, e.g., Glover & Marshall, 1993). This chaotic-transition premise ties discussion of the workforce development problem to the second problem associated with the rise of STW in Wisconsin: the problem of low effort and achievement shown by pupils in the K-12 schools, especially in high schools.

THE K-12 SCHOOLS PROBLEM

Throughout the 1980s, observers of schooling in the United States generally reported low levels of effort and achievement on the part of students enrolled in the K-12 schools. Coming as they did from authorities known to be strong supporters of public education, these reports could not be lightly dismissed. Goodlad (1983, p. 113), for example, in his report of a nation-wide study, described a general picture of passivity among students. Sizer (1984, p. 54), similarly, described high school students as all too often docile, compliant, and without initiative. Powell, Farrar, and Cohen (1985), introducing a metaphor that became well known, described high school students as shoppers passing casually through a shopping mall high school, deciding on their own terms what and whether they would consent to learn. Boyer (1983, pp.15-16), commenting on a high school he took to be typical, described classes as mostly routine, with relations between students and teachers marked by a tacit agreement: don't expect much from me, and I won't expect much from you. Jackson (1981), commenting on a school selected for observation because it was said to be doing an exemplary job of serving the urban poor, described the weak hold of the school on its students and the low level of the academic work it expected of them.

Additional evidence of low effort and low expectations appeared during the 1980s in studies of how students spent their time. Studies of time-use in school showed that, on average, students engaged actively in efforts to learn during about half the time they spent in school, with the other half lost to absences, lateness, and inattention (Bishop, 1989, p. 5). Data from the High School and Beyond Survey (again, during the 1980s) showed that students spent an average of 3.5 hours per week on homework. "When homework is added to engaged time at school, the total time devoted to study, instruction, and practice is ... 18-22 hours per week... By way of comparison, the typical senior spent 10 hours per week in a ...job and about 24 hours per week watching television" (Bishop, 1989, p. 6).

Similar concerns prevailed in Wisconsin. The Commission on Schools for the 21st Century spent seven months examining Wisconsin's schools in light of the needs it saw arising from developments in the global economy. Claiming that Wisconsin's schools remained among the best in the United States, the Commission (1990, pp. 4-11) nonetheless identified a host of problems. In Wisconsin, it said, the schools' academic mission had drifted out of focus. Uncoordinated, piecemeal efforts at improvement had left school programs cluttered and had fragmented

teaching and learning. High school students, despite the clutter of special programs and options, faced an inadequate range of opportunities to learn, especially in respect to technology, work, and citizenship. And teachers and administrators faced increasing difficulty in their efforts to engage students in serious effort and to keep order among them. These problems looked especially acute in the Milwaukee Public Schools (MPS). According to the 1991/92 through 1993/94 MPS district report cards, the average daily attendance rate for MPS high schools was only 80 percent. The high school grade point average over the same time period was 1.67, and the cumulative high school dropout rate averaged 38 percent (Wilson et al., 1995, p. 2).

Of the various explanations offered for observed patterns of low effort, low expectations, and low levels of satisfaction in and about the K-12 schools, one had special relevance for the STW idea. It was an explanation emphasizing the remoteness or irrelevance of the schools' academic programs. According to this view, changes in technology and the nature of leadership, work, and citizenship in the new economy had made obsolete traditional modes of teaching and coursework focused on single subjects (Commission on Schools for the 21st Century, 1990, p. 8). Especially in high schools, teachers of academic subjects were said to focus too narrowly on formal, disciplinary requirements, depriving students of opportunities to use their practical intelligence in efforts to solve real-world problems (see Gray & Herr, 1995, pp. 58-61; *School to Work and Your Child*, 1997). Isolated from adults, confined in classrooms, restricted to work on textbook problems, and rewarded more for compliance than for accomplishments, students did not exactly fail to achieve, according to this view. Instead, in varying degrees, they declined to take up the learning tasks posed for them in school, finding them unworthy of serious attention. In this manner, inappropriate goals and practices on the part of the schools were said to produce the disaffection and slack work habits about which school people and others complained.

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It was not a new criticism. Previous formulations of it were the stock-in-trade of the Progressive critics in their arguments after World War I for the expansion of developmental and social goals in school programs (Krug, 1969). But here, too, a curricular commonplace — to accommodate disaffected students, expand the curriculum and infuse it with practical learning — came in for reinterpretation late in the 1980s. The need for reinterpretation arose in part from widespread acknowledgment of the failures of earlier approaches to vocational education. In addition, an impressive line of new scholarship about learning as it occurs outside of school suggested what seemed to be a solid basis for new directions in planning. Synthesized from social scientists' research about cognitive performance in out-of-school settings, this scholarship elaborated and provided empirical validation for the old idea that working in school on academic tasks bears little resemblance to the dynamic reality of working and learning in offices, laboratories, hospital emergency rooms, shop floors, design studios, and so on.

In her 1987 presidential address to the American Educational Research Association, for example, Resnick (1987) summarized broad contrasts between learning in school and out. Learning in school emphasizes individual cognition (the essay written by one student, for example), whereas learning outside school emphasizes shared cognition (on board a naval ship, for example, several sailors must coordinate their efforts to pilot the ship in and out of port). Or again, learning in school emphasizes pure mentation (no use of the dictionary during the impromptu essay), whereas learning outside emphasizes the use of tools (task-specific tables, for example, used by street vendors in currency transactions). Similarly, in an analysis of the circumstances of learning and how those circumstances affect what can be learned, Brown, Collins, and Duguid (1989) argued that educators work against their own academic goals if they try to ignore the situated nature of cognition. In order to produce useable, robust knowledge in academic domains, they should turn to activities of cognitive apprenticeship, embedding learning in activity as that activity would be carried out by master practitioners in authentic workplace settings.

In their analyses of learning in school and out, Resnick and Brown, Collins, & Duguid depart from an earlier line of Progressive criticism in which practical, experiential learning had been extolled in opposition to academic learning (see Krug, 1969, pp. 278-283, and cf. Hofstadter, 1963, pp. 323-35). Instead, Resnick and other theorists of situated learning said, academic learning *and* learning for civic and work-related purposes would be better served if schools could find ways to reintroduce key elements of the apprenticeship experience throughout their programs. To teach science, mathematics, history or English *and* to prepare young people for work, educators should find ways

to engage young people as workers in the domain in question. It was an idea that remained to be developed in concrete detail, but the bare outline of it captured the attention of reformists who sought a principled basis for reorienting school programs toward work-related goals — without creating new versions of the vocational-track dumping grounds familiar to the students and teachers of an earlier generation (see Olson, 1997, pp. 14-15).

If the idea in question — that situated learning attained through new forms of apprenticeship experience might provide the key ingredient for a comprehensive reform in workforce development and in K-12 schooling — had arisen merely from academic scholarship, it might have attracted little attention outside university circles. But additional evidence seemed also to be at hand from a real-world source. The German school system, envied by many Americans for its high academic standards, featured an extensive program of apprenticeships designed to help young people move smoothly from school to work while continuing their education on the job (see, e.g., Lerman & Pouncy, 1990). The idea evolving in the United States seemed already to have an exemplar in Germany.

In light of the problems being addressed in Wisconsin, the German example looked compelling. By providing systematically for work-based learning, the German apprenticeship system apparently addressed motivational problems among students who were not academically oriented. By imposing order on the transition from school to work, it apparently reduced wasteful drifting and job shopping. It placed young people in contact with adults outside the school, moreover, in contexts where their interaction would be based on genuine, reciprocal responsibilities, not ministration from the helping professions. And it improved on old-fashioned vocational training by placing responsibility for skills development in the hands of private sector employers, thus ensuring that training priorities would evolve in response to actual market requirements.

Attracted by these apparent strengths of the German system, many American educators and political leaders embarked on study tours of German schools, returning to recommend adoption here of some of their features. Among the visiting Americans were Wisconsin Governor Tommy Thompson and Superintendent of Public Instruction Herbert Grover (Shively, 1992, pp. 1A, 4A). Governor Thompson and Superintendent Grover would subsequently cite the German example in their endorsements of STW in Wisconsin. By 1996, when Wisconsin had established standards for 13 apprenticeship occupations, and apprenticeship programs in the state enrolled 730 students, the Governor credited Wisconsin's adaptation of the German model. We've got the German system in Wisconsin, he told one interviewer; we changed it and modified it. But it is basically the German apprenticeship program here in Wisconsin, and it is working (Olson, 1997, p. 87).

School To Work Evolves As A Comprehensive Reform Program

By 1991, the Wisconsin legislature had passed Act 39, requiring the Department of Industry, Labor and Human Relations (DILHR), in cooperation with the Department of Public Instruction (DPI) and the Wisconsin Technical College System (WTCS) Board, to develop a youth apprenticeship program. The Act provided for the appointment of a Youth Apprenticeship Council and specified rules to govern youth apprenticeships in conjunction with Wisconsin's child labor laws. The Act also required school districts, with the assistance of the WTCS boards, to establish tech-prep programs enabling high school students to gain advanced standing in WTCS associate degree programs through high school coursework coordinated with WTCS program requirements. The post-secondary enrollment options program also enabled 11th and 12th grade students to earn high school credit for certain courses completed at post-secondary institutions.

Two acts followed in 1993. Act 16 provided state aid for tech-prep programs and permanent funding for DILHR's Office of Workforce Excellence, authorizing it to provide oversight for school-to-work programs. It also established a career counseling center program to provide access for young people to career education and job training information. And it provided funds for youth apprenticeship training grants to participating employers. Act 339 modified the Education for Employment standard, incorporating it into the school-to-work initiative, thus providing a basis for subsequent assessment of school districts' progress in developing and implementing school-to-work programs. The Act also required school districts, beginning in the 1997-98 school year, to incorporate new STW features in their education for employment curricula. The STW features include curricula for applied academics (e.g., an English course might focus on desk-top publishing), enhanced opportunities for technical training, youth apprenticeships or other job training and work experience, and instruction in employment skills.

Aggressive pursuit of opportunities created by federal legislation fostered these emerging developments in Wisconsin. In 1993, the Wisconsin Department of Administration received a grant from the U.S. Department of Education to develop integrated curriculum products for use in youth apprenticeship programs and to fund a Wisconsin Demonstration Institute, which was to provide means for disseminating results from local programs. In

1994, the School-to-Work Opportunities Act (STWOA) became law (U. S. Congress, 1994). Wisconsin, one of eight leading-edge states implementing STW, applied for a grant under the Act and received $27 million. The grant became a major source of support for STW activities in Wisconsin.

The stated purposes of the STWOA indicate the broad sweep of the STW idea as proponents envisioned it. STW programs, according to the broad view, should do the following:

- establish a national framework within which all states can create statewide School-to-Work Opportunities systems that are a part of comprehensive education reform and integrated with the Goals 2000: the Educate America Act and the National Skill Standards Act of 1994;

- facilitate the creation of a universal, high-quality school-to-work transition system that enables youth in the United States to identify and navigate paths to productive and progressively more rewarding roles in the workplace;

- utilize workplaces as active learning environments in the educational process by making employers joint partners with educators in providing opportunities for all students to participate in high-quality, work-based learning experiences;

- use federal funds under the Act to underwrite the initial costs of planning and establishing statewide School-to-Work Opportunities systems, to be maintained with other federal, state, and local resources;

- promote the formation of local partnerships, dedicated to linking the worlds of school and work, among secondary schools and post-secondary educational institutions, private and public employers, labor organizations, government, community-based organizations, parents, students, state educational agencies, local educational agencies, and training and human service agencies;

- promote the formation of local partnerships among elementary schools, secondary schools and middle schools, and local businesses, as an investment in future workplace productivity and competitiveness;

- help all students attain high academic and occupational standards;

- build on and advance a range of promising school-to-work activities, such as tech-prep education, career academies, cooperative education, youth apprenticeships, school-sponsored enterprises, business-education compacts, and promising strategies that assist school dropouts;

- improve the knowledge and skills of youth by integrating academic and occupational learning, integrating school-based and work-based learning, and building effective linkages between secondary and post-secondary education;

- encourage the development and implementation of programs that will require paid, high-quality, work-based learning experiences;

- motivate all youth, including low achievers, school dropouts, and those with disabilities, to stay in or return to school (or an alternative classroom setting), and to strive to succeed, by providing enriched learning experiences and assistance in obtaining good jobs and continuing education in post-secondary educational institutions.

According to this broad view, STW would do more than provide a new range of alternatives for some students and parents. It would launch a movement. It would challenge all students and parents (the word all appears frequently in STW advocacy, often in bold face type), issuing a wake-up call to those who remained attached to ill-considered assumptions about the overriding importance of college preparatory school programs. Deploring the college mania mentality, Gray and Herr (1995, p.29), for example, contended that far too many young people sought admission to a college or university upon graduation from high school. In this matter, decisions could be influenced for the better by school counselors and teachers who would provide (through STW assistance with career planning) objec-

tive information about the academic abilities needed for success in college, along with information about alternative, non-college options (cf. Gray & Herr, 1995, pp. 116-118). All students would benefit from participation in analysis of this sort, just as all would benefit from the infusion of STW curricular innovations throughout K-12 programs.

In Wisconsin, the far-reaching, comprehensive vision of STW had considerable influence. It is built into the reform proposals — aimed at a major restructuring of the schools, not merely a tune-up — recommended to the citizens of Wisconsin by the Commission on Schools for the 21st Century. In the K-12 curriculum framework it proposed, the Commission (1990, p. 23) listed career and occupational development as one of seven over-arching categories for the state's school programs. To assure implementation, the state should require school districts to provide career-related learning options, and each high school graduate should be required to demonstrate work-readiness in employment situations (Commission, 1990, p. 28).

State STW policy reflects aspects of this broad view. Based on the federal model, "Wisconsin's school-to-work transition model is designed to improve employment opportunities for **all** youth, including students who are college bound..." (Best-Louther, n.d., p. 2; emphasis in original). According to a STW web page (*www.stw.ed.gov/STATES/WIECS.HTM*), Wisconsin's vision is that when the class of 2000 graduates, 90 percent will have achieved basic skills mastery against challenging state and national academic content standards..., all students will have a career plan; all students will have had at least some exposure to the workplace; one of three graduating seniors will have a career major linked to an associate degree and be planning to go on to a technical college; one out of five high school seniors will have earned or be in the process of earning a state skill certificate in an industry area; and such skill certificates will be available in 30 industries.

In the Milwaukee area, an even more expansive view of STW received endorsement in the report of the School to Work Transition Task Force (1993), titled *School to Work: Lea* ...*fe*. This report states that "educational decisions are guided by a significant expected final outcome of th... ...ucational process — success in the workplace." The entire Milwaukee Public Schools (MPS) curriculum, accordingly, stood in need of reconfiguration as a STW program, as indicated by the following (excerpted) list of rec...mmendations:

- MPS would plan and implement a new Integrated Studies Curriculum (ISC) for all Milwaukee Public School middle and high school students;

- it would design Integrated Studies Focus Programs to attract heterogeneous groups of students, including those with exceptional needs and language differences;

- it would establish rigorous academic and experiential learning goals, based on advice from educators and from occupational experts;

- it would establish Integrated Studies Focus Programs to integrate many academic, vocational, and fine arts subjects for all students, beginning in middle school;

- it would reconfigure the use of time and space to accommodate interdisciplinary planning, block scheduling, team teaching and student travel to non-school learning sites;

- it would develop an ongoing assessment process to measure progress by students, staff and the community in reaching agreed-upon goals;

- it would explore ways to connect curricula to workplace and community experiences;

- it would institute a comprehensive system of real-world learning experiences including student businesses, job shadowing, mentorships, partnerships, co-op programs, youth apprenticeships, and job training;

- it would ensure that school- and work-based curricula set standards high enough to enable graduates to meet post-secondary school requirements;

- it would significantly expand post-secondary options for college and vocational learning.

The Milwaukee Public Schools adopted the comprehensive view of STW in 1993, describing its STW initiative broadly as a systemic effort to improve academic, workplace, and social outcomes for all students. STW activity in MPS would begin in kindergarten, not in high school; it would address all interests including those related to citizenship, problem solving, and personal growth; and it would offer options for students of all strengths and skills (*School to Work and Your Child*, 1997). It would, moreover, engage students in the practice of freedom to transform the world (Wilson et al., 1997, I-1). It was by no means clear how this sweeping vision could be implemented distinctly, in a way that would produce identifiable STW outcomes over and above those otherwise forthcoming from MPS programs. Would it turn out in the end to have provided merely a new set of slogans? At least in public documents, no discussion of that question accompanied MPS's embrace of STW as a transformative policy.

School To Work Program Components and State-Level Administration

STW programs in Wisconsin are constituted of school-based components, work-based components, and connecting activities. School-based STW activity includes instruction for career awareness and exploration, curriculum reform aimed at integrating academic and work-related learning, and competency-based technical courses for students enrolled in youth apprenticeships. Work-based STW activity includes school-supervised work experience based on industry standards, leading to a skill certificate; workplace mentoring and instruction in workplace competencies; and instruction in all aspects of an industry in which the student is interested. Connecting activities include those undertaken to articulate programs between high schools and technical colleges, to encourage the active participation of school partners and employers in STW, and to assist students with their educational, training, and occupational plans.

At the state level, administrative responsibility for STW is divided between two agencies, the Wisconsin Department of Public Instruction (DPI) and the Department of Work Force Development (DWD, formerly DILHR).

The DPI takes major responsibility for a subset of STW activity called tech-prep. Participation in tech-prep is mandatory for K-12 districts. Its goal is to develop coherent sequences of academic and technical coursework, articulated between the high schools and the technical colleges. Students enrolled in tech-prep participate during all four years, or the last two years, of their high school programs; then they study for two years in a postsecondary institution (two plus two or four plus two). A tech-prep high school program also might lead to a two-year postsecondary apprenticeship, with coordinated instruction to assure proficiency in mathematics, science, communications, and technology; the outcome credential in this case is an associate degree or certificate in a specific career field.

Tech-prep activity is funded in part by federal money made available through the Carl Perkins Vocational Education Act and the Job Training Partnership Act grant programs for secondary schools. These grants are administered in Wisconsin by the joint secondary-postsecondary Tech-prep grant program, in cooperation with the Wisconsin Technical College System Board (DPI web page). To facilitate coordinated planning for tech-prep and other STW activity, the Wisconsin DPI has established 16 regional STW consortia, each with a designated STW consortium coordinator.

The DWD focuses on work-based learning. Work-based learning includes Wisconsin's apprenticeship program. Participating students engage in two-year apprenticeships during their junior and senior high school years. They are placed in paid jobs and they receive on-the-job training from assigned mentors. Upon completion of their apprenticeship programs, they receive a high school diploma and a Certificate of Occupational Proficiency. They also acquire advanced standing credits which they may apply toward program requirements in Wisconsin's technical colleges, and they meet the admission requirements for most Wisconsin four-year colleges and universities. Apprenticeships are currently available (with variations from district to district) in 15 areas, including biotechnology, drafting and design, financial services, graphic arts/printing, health services, manufacturing, and insurance. Other areas are under development.

How Does School To Work Look In The Schools Today?

STW in Wisconsin encompasses a broad range of practices, with considerable variation from district to district. District programs, moreover, are in flux, expanding or contracting as district priorities change. Nonetheless, certain patterns can be observed. To indicate the range of activities in question, we have reviewed summary data from STW implementation reports and follow-up surveys prepared to date. We also have interviewed curriculum directors from 45 Wisconsin school districts in an effort to capture the situation-specific quality that marks some STW activity.

1. Implementation Studies

The STWOA emphasizes program evaluation, requiring states to report progress in STW implementation over a range of outcome measures. Each state is expected to submit its reports by reference to its own STW priorities, as described in its STW grant. In Wisconsin, reports are referenced to nine STW Implementation Benchmarks established by the Wisconsin DWD (Mason & Thorn, 1997, p. 4). Each benchmark calls for a participation-count statistic, not an assessment of student learning (the baseline information one would need to assess learning as an effect of STW is not available). The benchmark categories are as follows:

- The percent of 9th-12th grade students in job-shadowing activities
- The percent of 11th grade students with written career plans
- The percent of 11th grade students with a written career major
- The percent of 11th-12th grade students enrolled in a state-endorsed youth apprenticeship program
- The percent of 12th grade students completing a STWOA skill-certified co-op program
- The percent of 9th-12th grade students in all other school-supervised paid work experience
- The percent of 9th-12th grade students in all other school-supervised, unpaid work experience
- The number of employers offering paid work experience for high school students
- The percent of 9th-12 grade students enrolled in an integrated, academic and occupational course

Using these benchmarks, the Center on Education and Work (CEW) at the University of Wisconsin-Madison has begun to compile a set of implementation profiles, some for the state as a whole, some for targeted samples. Its results to date (the project will not be completed until September 2000) provide at least an interim description of the level of penetration of STW policy in the state (Mason & Thorn, 1997, p. 7).

Table 1 summarizes data on STW participation for Wisconsin students statewide, grades 9-12, for 1995-1997 (boldface rubrics from the original source).

Data presented in Table 1 show that STW participation rates are much higher in school-based activities than in work-based ones. Apprenticeship participation, for example, has grown during the years in question, but the number of participating students represents less than 10 percent of the population in question. It is apparently easier for K-12 educators to involve students in career awareness activities than in deeper STW activities that connect them to a workplace.

Table 2 summarizes data on STW participation, according to the same benchmarks, for a sample of 20 early implementer high schools — schools in which educators received funding for STW programs in the first round of grant awards in 1995.

Data presented in Table 2 reveal differences between early-implementer schools and schools statewide. Early-implementer schools have developed co-op programs at three times the rate of the average school, for example, and they have experienced growth in other school-supervised work experience. Participation rates in career development activity also exceed state averages. Nonetheless, participation rates look low by comparison to the student populations in question, especially in work-based learning activity. For integrated and applied coursework, complete data were not available. Mason and Thorn (1997, p. 22) state that the available number of integrated and applied courses increased, in absolute terms, during the time in question, but that integrated, applied courses continued to be offered preponderantly in business and technical education programs.

Taken together, the data suggest certain generalizations. First, reported participation rates are higher for school-related than for work-related learning activities. (In this respect, STW in Wisconsin resembles STW nationally; see Zehr, 1998, p. 29.) Many students apparently do participate in career awareness activities, write career plans, and develop career majors, for example, compared to the few (in percentage terms) who participate in youth apprenticeship or co-op programs. This pattern can most likely be explained by the relative ease with which school-based

TABLE 1 Student Participation in STW State-wide, by Wisconsin Benchmarks

Career Development	May 1995	May 1996	May 1997
% 9th-12th grade students in job shadowing activities	4.3%	7.5%	10.4%
% 11th grade students with written career plans	39.8%	59.0%	72.7%
% 11th grade students with written careen major	22.2%	38.0%	44.5%
Work Based Learning			
% 11th-12th grade students enrolled in state-endorsed youth apprenticeship	0.3%	0.6%	0.9%
% 12th grade students completing a STWOA skill-certified co-op program	—	0.3%	0.3%
% 9th-12th grade students in all other school-supervised paid work experience	2.7%	4.7%	5.2%
% 9th-12th grade students in all other school-supervised unpaid work experience	2.5%	3.4%	3.6%
Number of employers offering paid work experience	4,878	9,248	9,883
Integrated and Applied Courses			
% 9th-12th grade students enrolled in integrated, academic and occupational courses	15.4%	27.5%	N/A

Source: Adapted from Mason & Thorn (1997), p. 7.

TABLE 2 Student Participation in STW, Early Implementer Schools, by Wisconsin Benchmarks

Career Development	Study Schools May 1997	State-School Level % Change +/-
% 9th-12th grade students in job-shadowing activities	15.6%	5.2%
% 9th-12th grade students with written career plans	74.4%	1.7%
% 9th-12th grade students with written career major	62.7%	18.2%
Work-Based Learning		
% 11th-12th grade students enrolled in a state-endorsed youth apprenticeship	1.1%	0.2%
% 12th grade students completing a STWOA skill-certified co-op program	1.8%	1.5%
% 9th-12th grade students in all other school-supervised paid work experience	7.1%	1.9%
% 9th-12th grade students in all other school supervised unpaid work experience	2.9%	-0.7%

Source: Adapted from Mason & Thorn (1997), p. 11

STW activities can be assimilated to ordinary patterns of classroom activity. A career planning unit, for example, is the sort of thing most social studies and language arts teachers can fold easily into their regular work; they are familiar with the idea (they may well have experienced such a unit in their own middle-school years, since it has long been a staple in school programs), and putting it into play requires little in the way of special expenditures or institutional arrangements. In this respect, an apprenticeship or co-op work experience is altogether different.

Second, reported participation rates vary from school to school. In this mix, the early- implementer schools generally are the ones doing more with STW than other schools statewide. The pattern of differences suggests, Mason and Thorn state (1997, p. 11), that the early implementer schools may have had employment-related programs in place before the advent of STW and may therefore have been well positioned to move quickly when new STW opportunities became available. Here, too, the baseline information one would need to settle the question about STW program effects cannot be obtained.

Third, although the data reported by Mason and Thorn (1997) are incomplete, it seems clear from their discussion that the goal of curricular reform through integrated and applied coursework remains a distant prospect. Teachers identified many obstacles to widespread implementation of integrated, applied coursework. Nor was the problem merely one of external constraints. Teachers reported struggling with the idea itself — disagreeing over what integrated, applied teaching might actually involve and what its purpose should be. Mason and Thorn conclude, accordingly, that the I & A idea is still in its infancy (Mason & Thorn, 1997, pp. 27-29). About that conclusion it is worth noting that the infant in question was born early in this century, when Progressive educators declared that integrated and applied instruction would play a key role in reforming American education.

2. Follow-up surveys: Reports from youth apprenticeship graduates, parents, and employers

From 1992 to 1997/98, STW youth apprenticeship programs in Wisconsin have shown growth. The programs themselves have grown in number from 1 to 15. The number of participating employers has grown from 9 to 820. The number of students participating has grown from 21 to 1290, and the number of apprenticeship graduates (as of 1997) has grown from 0 to 347 (reported by the DWD). Among recent graduates (class of 1996), nearly 75 percent said in response to a survey that they have actively pursued postsecondary education — 40 percent in 4-year college or university programs, 25 percent in technical college programs, and the rest in UW Center or other programs (Phelps & Fulton, 1997, p. 3). Ninety-six percent said that they intended to use their postsecondary education to continue preparing themselves for work in their apprenticeship field. Sixty-five percent said they were still enrolled in their postsecondary programs after one year (reported by the DWD).

Youth apprenticeship graduates (class of 1996) report high levels of satisfaction with their apprenticeship programs. They believe generally that their program experiences have enhanced their earnings and employment potential, their sense of confidence in having selected an initial career field, their sense of self-responsibility, and their ability to work well with others (Phelps & Fulton, 1997, p. 14). Ninety percent of the graduates say they were offered a position by their apprenticeship employer following high school graduation. Sixty-eight percent (of the class of 1995 graduates) say they continued to work an average of 12 months for their apprenticeship employer (DWD, 1997, March). In assessing the relationship of their current jobs to their apprenticeship training experiences, 69 percent said their work was closely related to their training (Phelps & Fulton, 1997, p. 5).

Parents responding to recent surveys also tend to report satisfaction with youth apprenticeship programs. Parents frequently said that mentors at apprenticeship workplaces dealt with apprentice trainees as adult co-workers, regarding them in some cases as vital employees. Parents also emphasized the benefits apprenticeship experience provides in getting young people introduced to the world of work and in helping them to make informed decisions about their futures (Phelps et al., 1996, November).

Overall, employers participating in apprenticeship training report that they are pleased with the design and operation of the program. More than 90 percent of those responding to a recent survey (Phelps & Jin, 1997) said they would recommend participation in the program to other employers. Nearly 42 percent said that their participation in the program benefited their company a lot; nearly 43 percent said it benefited them somewhat. The benefits identified include providing a community service, contributing to the training of a skilled workforce, and recruiting new employees. Employers in some industries (e.g., the automobile industry) were more likely than those in others (e.g., printing and manufacturing), to find their participation beneficial.

3. As curriculum directors see STW: Interview findings

We conducted telephone interviews with curriculum directors in Wisconsin school districts, selecting 45 districts at random from the total number of 426 possibilities. We chose to interview curriculum directors over school principals or STW coordinators in order to gain district-wide perspectives on STW as it affects school programs generally. Prior to the interviews we pilot-tested the interview questions with curriculum directors who were not included in our sample. Our direct telephone contacts yielded a high response rate; nearly everybody with whom we spoke was willing to participate. As would be expected in this random sampling, most of the participating districts represented small towns or rural areas of the state (e.g., Goodman-Armstrong, Mauston, North Crawford). Several districts representing larger population areas are also included, however (e.g., Green Bay, Racine, Waukesha, and Wausau), as are several Milwaukee-area suburban districts (e.g., Fox Point, Mapledale-Indian Hills, New Berlin, Shorewood). Because the Milwaukee Public Schools district is unique in size and in the nature of its commitment to STW, we conducted separate interviews with MPS personnel. The Appendix lists the participating districts.

a. STW activities

Nearly all curriculum directors (42 out of 45) reported that the schools in their respective districts implemented some aspects of STW. (Two K-8 districts and one K-12 suburban district reported little to no involvement.) Most identified STW directly with work-based learning activities, mentioning cooperative work placements, apprenticeships, job shadowing, and coursework or mentoring provided on-site, at the workplace. A few mentioned summer externships for teachers. School-based activities included provision of some integrated academic and applied courses. Connecting activities included several career awareness or career planning programs, business partners programs, and programs for dual credit articulation with technical colleges.

There's nothing new about STW except the name ... we always tried to do things to help the kids once they got out of here.

b. STW effects on curriculum

In their reports on the extent to which STW has affected the curriculum, some curriculum directors speak of a general, attitudinal effect, such that teachers are increasingly aware, because of STW, of their responsibility to attend to real-world examples and to encourage good work habits in their day-to-day teaching. (Among teachers who have held summer externships with private-sector firms, this effect is said to be especially strong.) And many report that, especially in grades K-8, teachers and guidance counselors engage in career awareness activities.

For the most part, however, curriculum directors say that STW has its main effects in areas of the curriculum specifically oriented to career preparation, especially in business and technical fields. Technical education has boomed, one curriculum director reported, elaborating the claim by reference to course offerings in computer science, computer-assisted drafting, and manufacturing. Other curriculum directors similarly emphasized course offerings in medical technology, foods, and agriculture. Courses of this sort are required of students only in a few districts, however; more typically, they remain electives.

The general, required curriculum has been much less affected by STW, most curriculum directors (32 of 45) said. Some spoke bluntly: there has been no impact of STW on the curriculum or no effect, per se. Others struggled to describe curricular effects — as in the case of one who said she believed that language arts teachers were trying now to do more with the writing of business letters, only to add that, of course, business letters always had been a part of the language arts curriculum. Several curriculum directors echoed this point — that what the schools now count as STW activity is often a continuation of coursework and programs that pre-dated STW (in agriculture, consumer economics, and work-study programs, e.g.), re-packaged under a new name. There's nothing new about STW except the name, one director said; we always tried to do things to help the kids once they got out of here.

About the general failure of STW to touch or penetrate the academic curriculum, some curriculum directors spoke almost ashamedly, deploring what they saw as a lack of interest in STW among teachers in the mainstream subject areas. Others had a more matter-of-fact analysis. In my district, the priority now is development of the [academic] standards and benchmarks, one said; STW is not going to get much attention because it is not in the standards.

c. Which students participate in STW?

About the extent of student involvement in STW, curriculum directors provided mixed responses. A minority (19 of 45) said that STW affects students across the board. Follow-up discussion of this claim revealed that it referred, typically, to ease of access, on the one hand (our STW opportunities are open to all, one said), and to elementary or middle school career awareness activities, on the other. But in reference to the high school grades, attention shifted toward work-based learning activities, and in respect to those STW activities most curriculum directors said that interest and participation was concentrated among those students not bound for college. College prep kids do college prep stuff in high school, one curriculum director stated.

The number of students involved in work-based learning programs — cooperative education placements and apprenticeships — often was small (especially in the case of apprenticeships) as a percentage of the school populations. Some districts had no students involved in apprenticeships; many reported numbers ranging from 2 to 6. "Apprenticeships? We have only ..." was a typical opening remark in response to questions about the numbers involved. In one untypical district, 50 high school students were said to be involved in apprenticeships.

By way of explanation for the low rates of participation in apprenticeship training, curriculum directors emphasized three points: that apprenticeship programs make heavy time demands on students which many student are unwilling to accept, that small town and rural school districts have limited access to placement opportunities on the scale of those available to urban and suburban districts, and that districts can afford to support apprenticeship programs only on a small scale. Some rural and small-town curriculum coordinators expressed resentment about what they saw as an inequitable emphasis in STW policy on apprenticeships as opposed to cooperative work placement programs, which they saw as more feasible for them.

Apprenticeships attract students who are serious to begin with

About the apparent split between college-bound students and others in rates of STW participation, two important qualifications emerged from the curriculum directors' responses. First, some curriculum directors reported strong interest among college-bound students in certain technology and applied academic elective courses. We've got a great technology course, one director said, and a lot of college prep juniors and seniors want to take it. It's just a good course, and they need some electives anyway. Second, apprenticeship programs appealed strongly to some college-bound high school students. At first we pushed these [apprenticeships] just for the kids we thought would not be going on [to college], one director said, but now everybody wants in. Another emphasized that apprenticeship programs should not be thought of as a catchall for at-risk students. Apprenticeships attract students who are serious to begin with, he said. A recent follow-up study (Western, 1998) commissioned by a Milwaukee suburban district yielded a similar finding. Six out of a group of nine recent graduates of an apprenticeship program in this district said that they attached a high value to their two-year apprenticeship experiences in banking even though they enrolled subsequently in college programs and did not intend to pursue careers in banking. They valued the opportunity for new, out-of-school learning that their apprenticeships provided, and they responded positively to the challenging nature of the responsibilities it placed on them.

d. Which faculty members participate in STW?

Faculty involvement in STW activity is generally low, most curriculum directors (35 of 45) said, and it tends to be concentrated among teachers in technology, business, and vocational courses and programs. Other teachers are said to be less involved or not involved at all. Despite the fact that money for STW staff development and opportunities for teacher externships are available in her district to all teachers, one curriculum director said, few teachers show an interest in either. Another said of STW staff development that those teachers who have experienced it are the ones most apt now to seem saturated and tired of STW.

Some attribute the relative lack of interest in STW to the subject-matter orientation of high school teachers. Middle school teachers, these curriculum directors say, are generally more receptive at least to the idea of integrated, thematic teaching. But in the high school, one said, they are into content. Or again, the wall goes up when you hit high school. As to why such resistance might be common among high school teachers (over and above the circu-

lar explanation that high school teachers are into content), one curriculum director said that within her district teachers had no clear sense of what the applied academics' concept means.

One might expect to find higher levels of involvement in STW among elementary school teachers, given the non-departmentalized classroom settings in which most of them work. But several curriculum directors said that elementary school teachers in their districts were not much involved in STW either, except in the work that many do on career awareness and career planning units. Elementary school teachers don't see beyond the four walls of their building, one curriculum director said; they are very nice, caring individuals, but they are not the most attuned to the outside world. No elementary school involvement, another said; our elementary teachers don't know much about STW so far.

e. How do students benefit from STW?

In response to our questions about how students benefit from participation in STW — in improved achievement, attendance, or school-completion rates, for example — curriculum directors agreed (45 of 45) that the school districts had no reliable information about such effects. Several believed, based on anecdotes and informal observation, that STW participation (especially work-based activities) helped individual students learn to think more clearly about vocational decisions and to make better course selections in school. Some students, for example, learned from their apprenticeship experiences that they were interested in business careers, but not business careers in the field in which they did their apprenticeships. For targeted groups (i.e., students in apprenticeships), moreover, curriculum directors generally agreed that there seemed to be a benefit in improved access to good jobs after graduation.

But all who spoke directly to the question emphasized that, as STW programs are designed and carried out in Wisconsin, there is no way to assess those programs' specific effects on matters related to achievement. STW activity tends to be integrated with other school programs, some said, so that it is not possible to isolate it as if it were an independent variable. Some students clearly do make gains according to various measures during their time of participation in STW, others said, but these tend to be good students in the first place, so it is hard to know for sure what STW has to do with the observed changes. There is no system in place for tracking GPAs, graduation rates, or other achievement-related matters in respect to STW, one curriculum director said; nothing targeted specifically to STW. The state does not ask for that.

4. STW in the Milwaukee Public Schools

From the start, STW proponents in Milwaukee thought of STW as a driving force for education reform on a broad scale. The STW Transition Task Force established in 1993 was asked by Superintendent Howard Fuller to examine the potential of STW in light of the district's problems with truancy, high dropout rates, low academic achievement, and underemployment. The STW plan subsequently developed in MPS called for systemic change, such that resources and effort within MPS and the larger community would coalesce in a distinctly new fashion to alter students' experiences radically, within the classroom and in work-based learning activity (Wilson et al., 1995, pp. 1-11). Proposed means to this end included aligning STW activity with MPS's K-12 Teaching and Learning Goals, assessing the impact of STW on student achievement, developing new partnerships or working relationships with the business community and postsecondary schools, and improving the capacity of teachers and administrators to contribute effectively to STW activity.

Staff development became an early priority, reflecting a view among administrators and teachers that the large goals of the project should be approached initially by an emphasis on improving school-based learning. A series of STW summer institutes for teachers ensued; the institutes emphasized uses of integrated teaching (i.e., teaching focused on problems or themes rather than academic disciplines) and classroom projects. A preliminary evaluation suggests that other early efforts also emphasized school-based activity. All MPS schools participating in the first phase of implementation were said to have shown progress in the school-based component of STW, but work-based learning experiences remained limited (Wilson et al., 1995, pp. 116-117).

Two phases or waves of STW implementation followed. An evaluation of the cumulative effort yielded an unusual summary. Under a what's working rubric, it listed extensive committee work related to STW; STW job-shadowing experiences provided for school principals, partners, and teachers; a new initiative for improving the teaching of mathematics and science; increased involvement in STW on the part of the Guidance Office, especially in supplying data bearing on MPS's progress in STW; administrative restructuring within the district; and helpful participation by STW teacher/facilitators (Wilson et al., 1997, pp. III-26 and III-27). It is a list that invites attention to what is not mentioned — e.g., improved academic learning, growth in opportunities for apprenticeship experiences,

improved job-placement rates, or improved articulation of MPS academic requirements with those of the technical colleges.

The account of what's not working (Wilson et al., 1997, pp. III-27 and ff.) is more extensive, and the problems noted in it say a great deal about the difficulty MPS experienced in seeking to impose STW onto its complex, diffuse system of education programs. Heading the list is a finding that MPS educators never came to an agreement about what STW meant: After three years, the definition and goals of STW are still not settled (Wilson et al., 1997, p. III-27). Elementary and middle school teachers had generally done more with STW than high school teachers had; high school teachers often balked, contending that STW emphases would dilute the academic curriculum. Some principals, called upon by STW policy to serve as instructional leaders, had found that their other obligations within a decentralized administrative system required them to focus on resource management instead. STW activity had not been coordinated effectively with the vocational education programs that pre-dated STW. Nor had graduation requirements been aligned with STW goals. As a result, and because procedures for data collection had not been aligned with STW programming, there was little evidence about the effects of STW on student achievement. Student participation in work-based learning activity had remained low. And, in general, people charged with responsibility to do so had found it difficult to scale up — to obtain cooperation and participation on a broad scale such that the goal of making MPS over in a new mold, shaped by STW, might be realized.

As of fall 1998, the future of STW in MPS looked doubtful. Its early promise had not been borne out, and events had apparently passed it by. Business and political leaders in Milwaukee had expressed an interest in revitalizing vocational-technical education to increase the supply of skilled-trades workers, in response to the needs of local industry (see, e.g., Sharma-Jensen, 1998; Williams & Held, 1998; and Meissner et al., 1998, p. 24). The MPS Board of School Directors had reallocated STW funds within the MPS budget, and MPS's STW director had resigned, saying there is no longer a need for her position. The Business Community Committee, a committee of business leaders who have worked with MPS on STW for years, was said to be disbanding. And the new MPS Superintendent had stated that School-to-work will continue to play a primary role, but the focus is shifting to providing internships and work experience for students, especially in the areas of high-demand jobs in Milwaukee (Williams, 1998, June 16).

WHAT DO WE PAY FOR SCHOOL TO WORK?[1]

One purpose of this study is to determine what Wisconsin spends for STW programs. Toward this end, we sought information from the state agencies involved and inspected documents and data from the Department of Work Force Development, the Legislative Fiscal Bureau, and the State Budget Office. Our inquiries have enabled us to estimate a cost profile for STW in Wisconsin, based on state and federal tax support. (Local tax support is not included here. Reliable estimates are not available.) Here are some of the highlights.

1. Highlights

- Three state agencies administer various STW programs: the Department of Workforce Development (DWD), the Department of Public Instruction (DPI), and the Wisconsin Technical College System. (WTCS).

- From FY 1991 through FY 1998, state and federal STW spending in Wisconsin totaled $195.4 million.

- Ninety-six percent of Wisconsin's STW financing is from federal sources.

- Annual spending grew from $17.5 million in FY 1991 to a peak of $32 million in FY 1996. FY 1998 spending is estimated at $26.5 million.

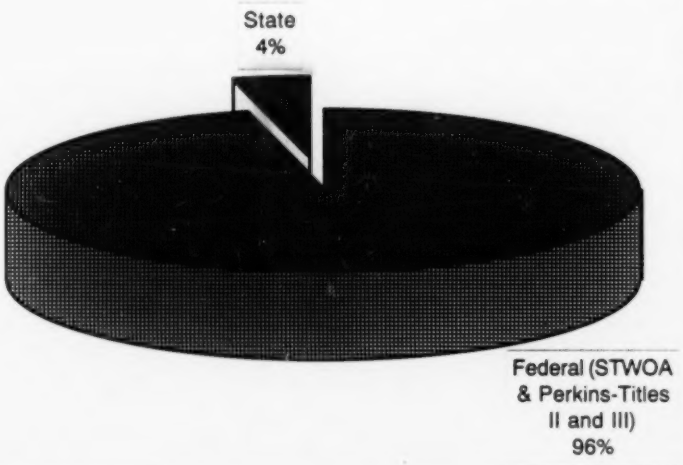
- About $300,000 was budgeted from FY 1995 through FY 1998 for STW program evaluation.

What constitutes STW spending? The definitions in question vary from state agency to state agency. In 1997, for example, data from the Department of Workforce Development revealed STW spending of $7,884,688; data from the Legislative Fiscal Bureau put the figure at $10,391,300; data from the State Budget Office put it at $29,380,806.

[1] Research for this section conducted by George Mitchell.

2. Measuring overall STW spending in Wisconsin, FY 1991-1998

FIGURE 1 Federal and State Financing of STW Programs in Wisconsin, by %, FY 91-FY 98



The most comprehensive estimate of STW spending comes from the State Budget Office. It accounts for four sources of revenue:

- Federal financing under Title II of the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. According to the Legislative Fiscal Bureau, 75 percent of Perkins Title II funds "are distributed through a formula to public...schools and WTCS districts for basic vocational programs which may include" STW programs.
- Federal financing under Title III-E (the Perkins Act). The Legislative Fiscal Bureau says these funds are used for local and statewide STW projects and for related administrative costs.
- Federal financing under the School to Work Opportunities Act (STWOA).
- State taxes.

Figures 1 and 2 show the relative reliance on these sources of funds.

3. Trends in STW spending.

Early in the 1990s, STW spending in Wisconsin consisted entirely of federal Title II and Title IIIE Carl Perkins funding. In 1991, federal Carl Perkins II funds provided $16,557,556 to STW programs and federal Carl Perkins IIIE provided $893,820. See Table 3.

TABLE 3 STW Spending in Wisconsin, FY 91

Source	Amount
Federal (Perkins II)	$16,557,556
Federal (Perkins IIIE)	$ 893,820
Federal (STWOA)	0
State	0

As the decade progressed, various state and federal initiatives expanded the initial scope and the base of program support. Figure 3 lists selected actions involved in this expansion. Table 4 shows how these various actions were accompanied by new funding sources and growth in overall spending.

Growth in STW spending coincided with a more diverse set of funding sources. In FY 1990, almost 95 percent of STW spending came from Title II Perkins grants — funds that were for the most part administered locally

FIGURE 2 Federal and State Financing of STW Programs in Wisconsin, by amount, FY 91-FY 98

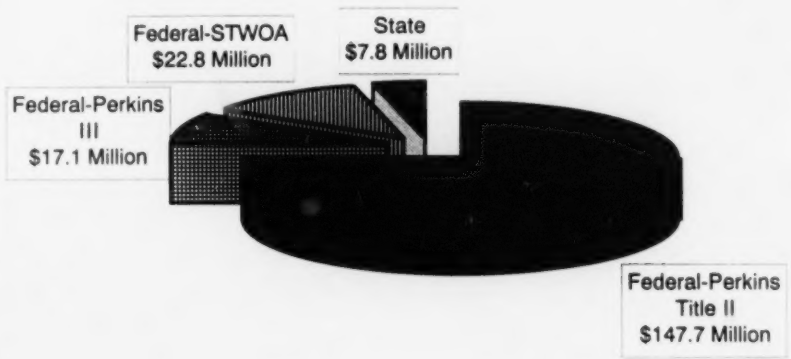


FIGURE 3 Initiatives Affecting Wisconsin STW Programming, 1990-95

Year	Authority	Action or Goal
1990	Governor's Commission on Schools for 21st Century	Various recommendations on STW
1991	U.S. Labor Depart. Commission on Achieving Necessary Skills	Various recommendations on STW
1991	Wisconsin Act 39	Youth apprenticeship, "Tech-prep," and "Post-Secondary Option programs"
1991	Governor's Commission for a Quality Workforce	Initial Oversight of STW in state
1991-1993	Governor's Cabinet for a Quality Workforce	Assumed Oversight of STW in state
1993	Governor's Actions: DOA-Office of School-to-Work Transition	Assumed Oversight of STW in state
1993	Wisconsin Act 16: DILHR-Office of Workforce Excellence	Assumed Oversight of STW in state
	Biennial Budget	$$ for youth apprenticeship curriculum development
	Wisconsin Act 339	"Education for Employment" curriculum standards to take effect in 1997-98
1995	Biennial Budget: DWD-Division of Connecting Education and Work	Coordination of STW in reorganized, former DILHR

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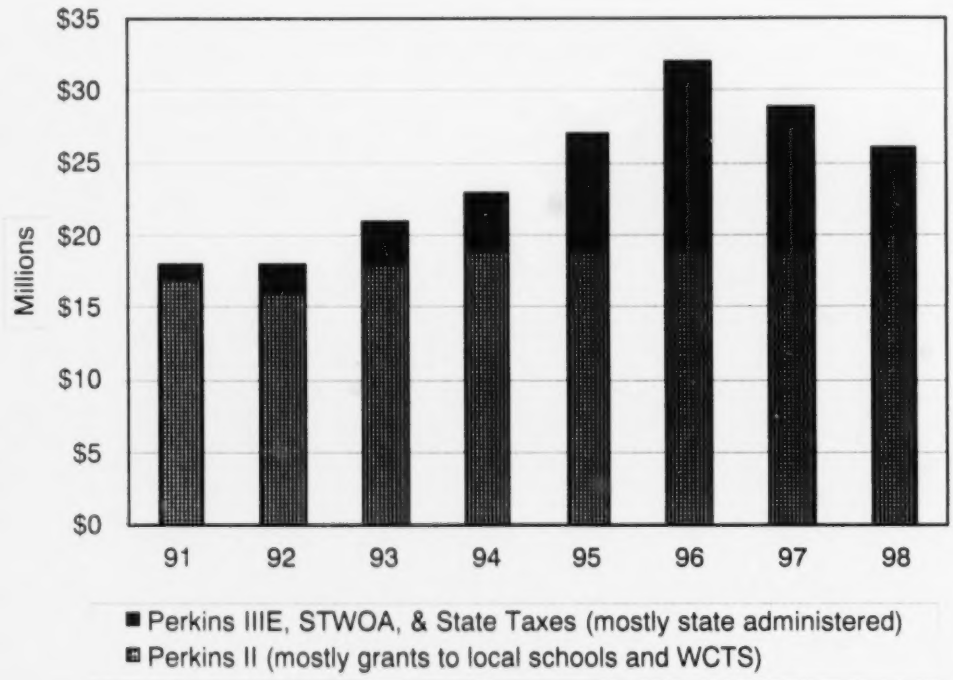
TABLE 4 STW Spending in Wisconsin, FY 1991 vs. FY 1997

	FY 1991	FY 1997	Change
Federal (Perkins II)	$16,557,556	$18,089,980	$2,432,424
Federal (Perkins IIIE)	$893,820	$2,012,126	$1,118,306
Federal (STWOA)	$0	$6,750,000	$6,750,000
State	$0	$1,610,700	$1,610,700
Total		*$29,362,806*	*$11,911,430*

by individual school districts and WTCS campuses. By FY 1996, Title II provided less than 60 percent of STW financing (the Title II share for FY 98 is estimated to be 75 percent). Newer sources of revenue included Title IIIE, STWOA, and state taxes. These changes tended to involve more

FIGURE 4 State and Federal STW Spending, FY 91-FY 98



state administration and decision making. Figure 4 depicts total STW spending by year and the amounts derived from Title II as compared to other sources.

Additional funding led to an increasing number of STW programs. For FY 1997, Table 5 shows the different programs, agencies, and sources of funds.

4. Funds for evaluation of STW

Were funds available for evaluation of STW in Wisconsin? Yes. The Legislative Fiscal Bureau (January, 1997) reports that the FY 1997 budget for STW included $85,000 to hire "an independent third party for an overall evaluation of the school-to-work program." Data from the Department of Workforce Development indicate that this

TABLE 5 Wisconsin STW Programs and Financing

Programs	Lead Agency	Amount	Source
Local Partnerships Grants for "local partnerships" meeting DPI, DWD. WTCS, and federal standards	DWD	$3,275,000	FED-STWOA
MPS STW Program	DWD & MPS	$600,000	FED-STWOA
Grants to local partnerships which fill "work-based slots"	DWD	$800,000	FED-STWOA
Technical Assistance & Development Grants	DWD	$400,000	FED-STWOA
Youth Apprenticeships for high school juniors and seniors; combines academic and on-the-job programs	DWD	$380,000 $96,400	State FED-STWOA
Career Counseling Centers local agencies, school districts, etc., which "provide students with access to comprehensive career education and job training information..."	DWD	$1,000,000	FED-STWOA
Technical Preparation Designed to help high school students identify and pursue post-secondary programs in the WTCS system	DPI	$1,911,500	FED-STWOA
Postsecondary Enrollment Options Permits high school students to attend college if certain courses aren't offered in the local district	DPI	$20,000	State
Administration and Evaluation	DPI, DWD, WTCS	$752,200 $1,156,200	State STWOA, Perkins
High School and WTCS Curriculum	DPI, WTCS	$18,987,980	FED-Perkins
Total		**$29,379,280**	

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sum is part of a larger total available for STW evaluation between FY 1995 — 1998. We estimate that Wisconsin has budgeted more than $300,000 for STW evaluation from FY 1995 to FY 1998 (FY 1995 = $50,000; FY 1996 = $80,320; FY 1997 = $85,000; FY 1998 = $85,000).

5. What do the costs tell us?

The dollar costs associated with STW tell us three things about the program. First, program costs are difficult to ascertain, and the difficulty derives in part from the system of STW program administration now in place. Administrative authority is diffused among three state agencies, and these agencies interact variously with local school districts. Confronted by this complex web of bureaucracy, only the most determined citizen could come close to learning what Wisconsin spends on STW and where the money comes from. (Most of the curriculum directors with whom we spoke knew little about the amounts and the sources of money spent in their districts on STW.) The diffusion of governance and budgetary authority diminishes program accountability; nobody is clearly accountable — to the Governor, for example — for STW program successes or failures.

Second, while exact cost figures are difficult to obtain, overall spending on STW in Wisconsin has amounted to more than $195 million, not counting local tax outlays, over seven years. The effort began modestly enough in enactment of a state curricular standard called Education for Employment, stressing opportunities for career exploration, instruction in work-related skills and attitudes, and work experience. By 1994, this state initiative had expanded markedly, taking direction from federal policy and drawing about 96 percent of its funding from federal sources. It is now, in respect to governance and budget, a state-administered federal program. If it does not feel like a top-down program to educators at the local level, that is because it provides support for a wide range of K -12 activities while requiring little in the way of commitment to particular instructional inputs or program outcomes.

Third, STW in Wisconsin came with money earmarked for evaluation. To date, that money has been allocated for and spent on formative evaluation. No evaluations have been done to assess the effects of STW on academic learning or its aggregate impact on the workforce. As a result, we know something about how well the program has met certain implementation targets, but we can learn nothing (directly from program sources) about how the program has served the main goals for which it was established. The decision to ignore summative evaluation of STW creates the impression, at least, that getting STW implemented was in fact its own goal, notwithstanding the large claims its proponents made about effects on learning that could be expected to follow.

SCHOOL TO WORK AS A POLICY RESPONSE TO THE WORKFORCE AND K-12 SCHOOLS PROBLEMS

How well has Wisconsin's STW initiative served the main purposes for which it was established? Good things have been done in its name, benefiting individual students and employers in important ways. Given the money and effort expended to date, it would be surprising if that were not so. But questions remain to be asked about the overall impact of STW, in light of the problems that called it into being. What has that impact been? Does it look sufficient, given current circumstances, to warrant continued support at present levels? Have the favorable effects of STW been offset in any way by unintended consequences that might have been avoided in a different conception of the project? We turn now to these questions.

1. The workforce development problem revisited

STW in Wisconsin emerged as a policy response to a human capital problem that seemed especially dire in a climate of economic decline. The problems at hand had prompted some consideration nationally of the need for a Japanese-style industrial policy for the private sector, so that the government could influence investment decisions that otherwise would be determined perhaps inefficiently, the argument ran — by market forces. In this climate, it seemed even more plausible to contemplate an analogous effort in K-12 education. Many young people and their parents were not approaching education-related decisions prudently, as investment decisions. Their decisions seemed, in the aggregate, to be inefficient, and this inefficiency seemed to be affecting the state's economy adversely. Why should the state not take steps, then, to influence these decisions? K-12 education was already the legal responsibility of the state, and the K-12 schools always had been deemed responsible, among other things, for serving the public's interest in the preparation of young people for work. Given this perspective, STW came into view as a forward-looking exercise in rational planning.

But circumstances late in the 1990s are much changed, in Wisconsin and elsewhere.

A long period of economic contraction in Japan has worsened, affecting economies throughout Asia. Germany suffers from meager rates of growth and high rates of unemployment. Depressed demand in Asian markets has hurt American exporters, and fears of worldwide recession have affected the policy decisions of central banks in the United States and Europe.

At the same time, Wisconsin's economy has rebounded. Unemployment rates are down. Wisconsin's overall unemployment rate during 1998 has averaged, as of November, 3 percent — the lowest rate for these months since 1960. Gross state product in Wisconsin, the counterpart of the nation's gross domestic product, is up. From 1995-1996, gross state product increased 3 percent, on average, in the Great Lakes states; Wisconsin's increase during that time was 3.3 percent, second only to Illinois'. Income and earnings figures for Wisconsin also are strong. Per capita personal income has risen from $15,017 in 1987 to $24,199 in 1997 — at an average annual rate of 4.9 percent (compared to 4.7 percent for the nation as a whole). And for 1997, Wisconsin led the Great Lakes states in earnings growth, with an employment earnings growth rate averaging 5.9 percent; the comparable rate was 5.5 percent for Illinois and 5.1 percent for Ohio (Beemiller & Downey, 1998).

Why the turnabout in Wisconsin? According to a recent report from the Federal Reserve Bank of Chicago (Testa, Klier, & Mattoon, 1997), the turnabout reflects a strong recovery in basic manufacturing and agriculture. These industries have restructured themselves, and they continue to dominate the state's economy. The Midwest generally is more concentrated in manufacturing and agriculture than the rest of the nation is, with a share of earnings derived from manufacturing jobs at 27 percent in 1995. But in Wisconsin the 1995 share of earnings from manufacturing was 29 percent — the third highest share in the U.S. In the last 11 years, Wisconsin has created more than 94,000 manufacturing jobs — an increase of 18.8 percent, compared to a 2 percent decline nationally. Wisconsin businesses also have experienced increasing success in global marketplace activity. Wisconsin now produces goods and services that people in other nations want.

...the challenges facing Wisconsin late in 1998 differ greatly from those emphasized in the 1980s.

As a result, the challenges facing Wisconsin late in 1998 differ greatly from those emphasized in the 1980s. The new challenges arise in large part from strength in the economy, not weakness. By the end of 1997, the employment growth rate in Wisconsin lagged at two percent — better than the rate for the Midwest, but still below the national rate. Why the lag in employment growth during good economic times? While the demand for workers is strong, the supply is inadequate. The post-war baby boom produced 90,000 new entrants into Wisconsin's workforce early in the 1980s, to replace 41,000 people nearing retirement age. That trend has now begun to reverse itself as the workforce ages. And 74 percent of Wisconsin's population aged 16 and over is already employed.

Accordingly, as the adult population approaches the limits of its capacity for work-force participation, Wisconsin now faces a labor shortage. In responding to one recent survey, 46 percent of business leaders said a shortage of workers was their chief concern; in another, 34 percent said their companies had lost work because they could not hire enough qualified workers. State economists now estimate that employers could hire 110, 000 new workers immediately (Governor acts now to build tomorrow's work force, 1998).

These developments in Wisconsin point up an inherent difficulty in attempting to use school programs for large purposes of social engineering. The problem may change before the school program can take effect. In the time it has taken Wisconsin to launch STW, one of the two problems that prompted people to establish it has changed dramatically. Wisconsin still needs to increase its supply of high-skilled workers, but in the context of an extraordinarily tight labor market what now seems crucial is to look beyond the usual sources of supply (Meissner et al., 1998). A proposal announced by Governor Thompson in September 1998 (the Initiative on Building tomorrow's Workforce) illustrates this point. The proposal includes plans to expand certain technical education and youth apprenticeship programs, but it emphasizes other initiatives that, taken together, reflect a new view of the underlying problem. The new initiatives include programs for expanded childcare services, to ease workforce entry for parents who would work at least part-time if affordable childcare were available; programs for adult apprenticeship training in high-skilled industrial areas; programs to increase workforce participation by under-used workers, including Wisconsin's growing Hmong and Hispanic populations; programs to bring new workers, including retirees and veterans, into the work-

force; and transportation programs, to help workers connect with jobs, childcare, and apprenticeship training (Governor acts now to build tomorrow's workforce, 1998).

In this changed environment, it is by no means clear that the STW idea would emerge as Wisconsin's workforce development policy of choice if it were broached as a new proposal late in 1998. (It is not mentioned, per se, in the education-related recommendations of a recent analysis of labor market issues in the Milwaukee area; see Meissner et al., 1998, pp. 23-26). Other initiatives targeted specifically to expanding the labor force would surely compete for dollars with the more general, diffuse STW approach. If STW were to come up for consideration late in 1998, moreover, its potential utility would be assessed in light of an economy that has rebounded in Wisconsin — and slumped elsewhere — for reasons that cannot be explained in either case by reference to workforce preparation or the redemptive power of K-12 education.

2. The K-12 schools problem revisited

It is not only the economic environment that has changed in Wisconsin since 1990. A new reform initiative based on state standards for K-12 curriculum and assessment also has come into play (Wisconsin DPI, 1997). As a result, in respect to the goal of improving academic learning, Wisconsin's education reform agenda is informed now by two different lines of thought. One line of thought is reflected in continuing efforts led by the DPI and the DWD to sustain the STW initiative and to represent it in its original guise as a double-barreled program aimed at improved academic learning and workforce development. The other is reflected in Wisconsin's emerging standards-led initiative, developed by the Governor's Council on Model Academic Standards.

Proponents of STW initially envisioned it as one component in a larger program of reform that also would feature an academic standards and assessment component (Best-Louther, n.d.). In Wisconsin, however, the STW initiative has proceeded, at least to date, independently of the state standards initiative. Leaders on both sides acknowledge that STW learning goals are not reflected in the new academic standards. In light of this, and since nothing has been done in other ways to assess the effects of STW on academic learning, proponents of STW have been able to say little about its academic side.

Because the academic standards will inform Wisconsin's Student Assessment System, the standards now are regarded as a first-order priority by many K-12 educators. Whatever is excluded from the scope of the standards will seem of little importance to school administrators eager to show satisfactory student achievement profiles. It is perhaps for this reason that the Milwaukee Public Schools, recently facing intense pressure from the Governor and the state legislature to improve academic achievement or face state-imposed restructuring, has apparently (Williams, 1998) backed away from its commitment to STW as a comprehensive reform program. Had STW in fact been able to galvanize MPS after 1993, improving teaching and learning in the manner foreseen by its proponents, a prudent superintendent would have showcased the program, not abandoned it, in the crisis over achievement effects.

To the extent that the new standards and assessment system becomes the driving force in K-12 reform activity in Wisconsin, it will marginalize STW. Apprenticeships and other work-related activities will retain their importance in some school districts (they were also important in some districts before the advent of STW); they may be expanded, in fact, as new initiatives such as the Governor's Initiative on Building Tomorrow's Workforce come into play. But the early vision of STW as a comprehensive, mold-breaking approach to the reform of academic programs will most likely fade and be forgotten. Academic programs will be shaped by the standards and assessment system, not by STW. (Here, too, STW in Wisconsin resembles STW nationally. A forthcoming report by Mathematica Policy Research Inc., based on a study of STW in eight states including Wisconsin, faults STW for being disconnected from the states' efforts to improve academic learning through standards and assessment programs. Because of this disconnection, the study predicts, STW is unlikely to survive after the federal money that now supports it winds down in 2001. See Zehr, 1998.)

3. The question of impact: STW and academic learning

From the start, STW in Wisconsin had as one of its main goals the improvement of academic learning in the K-12 schools. STW was to be different from older, discredited approaches to vocational education by virtue of its emphasis on high academic standards. Its proponents contended, moreover, that its favorable effects on learning would carry over to school programs generally. But although others interested in STW had emphasized the importance of standards and assessment (see Resnick & Wirt, 1996), the STW initiative in Wisconsin did not provide for development of an evaluation plan to assess the effects of STW on academic learning. As a result — this point was

confirmed by our interviews with curriculum directors and DPI and DWD staff officers — educators and state officials can say nothing definite about STW in respect to one of its two main goals.

It was important, of course, to track the implementation of STW. It would make no sense to evaluate an unimplemented program. Evaluating learning effects, moreover, would have been complex, especially in respect to school-based STW activity. Many teaching practices that get counted now as school-based STW learning activities (e.g., field trips, the development of student portfolios, career exploration units, consumer economics and personal finance units, instruction about business letters, keyboarding, and public speaking, and group projects focused on themes or problems) have been used commonly in K-12 classrooms for a long time. Because these activities are used in different ways by thousands of teachers in the day-to-day stream of classroom events, it would be difficult to focus on them as discrete variables, even in controlled studies. And because activities of this sort generally have not come into the schools as a new input, distinctly representative of STW, their effects, even if they could be isolated and described, would tell us nothing specific about STW.

Still, it should have been possible to learn something, over a period of about eight years, about the academic effects of STW. The money was there: about $300,000 budgeted for STW evaluation from 1995 to 1998. Some of this money could have been targeted to evaluation, if improved learning was actually a STW goal. People elsewhere (in Philadelphia and Boston, e.g.; see Zehr, 1998, p. 29) had undertaken efforts to assess STW programs for their academic effects. These efforts might have suggested directions for similar work in Wisconsin. In Wisconsin, moreover, the new academic standards and assessment project had been underway since the mid-1990s (the DPI issued its proposed standards in 1996), and planning for the alignment of STW learning goals with the standards might have begun then. Early alignment of that sort would at least have underscored the state's commitment to the academic dimension of STW, and it would have provided a starting point for subsequent STW evaluations.

4. The question of impact: STW and workforce development

While most proponents of STW agreed that it would address the goal of improving academic learning, all STW proponents emphasized its relevance to the goal of workforce development. More than anything else, that goal provided STW's reason for being.

It is obviously a broad goal, potentially encompassing many different outcomes. Some outcomes are clearly central to the concept, however — e.g., students' attainment of work-related skills and access to worthwhile job opportunities. Concerning these outcomes and others closely associated with them, the STW implementation audits and follow-up surveys suggest to date that STW activity — especially work-based activity — has had favorable effects for some students. Apprenticeship graduates in particular have experienced success in finding relatively high-wage employment opportunities related to their apprenticeship studies. The graduates report — and employers generally agree — that their training programs prepared them well for their jobs, in respect to technical, academic, and workplace skills (Phelps & Fulton, 1997).

But the impact question cannot be assessed without reference to matters of scale. And on this point the overriding fact is that very few students in Wisconsin (in percentage terms) have participated in work-based STW experiences. Between 1992 and 1996/97, 1150 students had entered into apprenticeship programs in Wisconsin, and 347 of these had seen their programs through to completion (reported by the DWD). By comparison, 258,965 students were enrolled in grades 9-12 in Wisconsin's public schools in 1994-95 (reported by the DPI), and 2,892,400 workers were employed in Wisconsin's (1996) workforce. The 347 apprenticeship graduates represented, in other words, about .001 of Wisconsin's 1994-95 high school student population and about .0001 of Wisconsin's 1996 workforce.

On the face of it, the STW participation counts and ratios look very small, but what do they imply about the economic impact of STW? One way to estimate that impact is by reference to the effects of additional income flowing into Wisconsin's economy by virtue of improved wage rates that might be attributed to STW apprenticeship training.

Suppose that all 347 apprentice-graduates had begun to work in 1996 and had jumped immediately to the average annual (1996) wage for Wisconsin workers — $26,018. (We pose this assumption for exploratory purposes only. Many apprenticeship graduates do not begin full-time work immediately upon graduating from high school; of those who do, few would jump immediately to earning the average wage.) The annual wage total for these workers then would be, hypothetically, $9,028,246. Especially given Wisconsin's tight labor market, however, the same 347 individuals most likely could have found employment, earning at least the minimum wage, if they had merely completed high school, without doing a STW apprenticeship. At the 1996 minimum wage of $4.75 per hour, and assuming an average 2080-hour work-year, the annual wage total for this group of non-STW graduates would be

$3,428,360. The difference between the two wage totals is $5,599,886; it is the additional income attributable, hypothetically, to STW apprenticeship training.

Directly and indirectly, the $5,599,886 generated in this best-case exercise would provide a STW dividend paid into Wisconsin's economy, since portions of the sum would flow to the support of public services (through taxes) and to purchases of various goods and services in private sector markets — producing, in a multiplier effect, additional rounds of spending. But that dividend could register only a weak impact on Wisconsin's economy. The reason becomes apparent if we compare the hypothetical STW dividend to wage totals for the larger workforce. Wages paid (again, assuming Wisconsin's 1996 average earnings from wages) to the other 2,892,400 Wisconsin workers would total, by comparison, $7,525,446,632 [2,892,400 x $26,018]. In other words, the economic impact of STW apprenticeship training, even given the favorable assumptions stated here, would account for about .0007 [$5,599,886/(2,892,400 x $26,018)] of the money flow generated in 1996 by wages earned in the state.

The STW starting points in question would be higher, of course, if one compared the number of apprentice-graduates only to the population of 11th and 12th grade students in the state, rather than all the high school students, and higher still (cf. Mason & Thorn, 1997, p. 11) if the comparison were based on apprenticeship enrollments rather than program completions. But even if adjustments of this sort were warranted, the changes would make little difference. In fact, doubling or tripling the number of graduates with significant work-based STW experiences over the next few years would yield only a slight aggregate impact on wages and the flow of money into the state's economy.

5. Unintended consequences and alternate possibilities

National journalistic coverage of STW has sometimes featured anecdotes about angry parents who fear that STW programs may steer their children into inappropriate courses of study and influence their career planning adversely. Some evidence of these concerns, arising from teachers as well as parents, has been noted in Wisconsin. Mason and Thorn (1997, pp. 24-25), in case studies carried out at four Wisconsin high schools, found that use of the career major concept in career planning activity had been inhibited in some schools by negative perceptions from staff, parents, and community members who viewed career majors as tracking devices likely to restrict students' subsequent educational or career choices.

Teachers and school staff have expressed other concerns about STW as well. Mason and Thorn (1997, p. 25) found, for example, that some teachers and counselors felt burdened by their responsibilities for working with students on STW career portfolios. By far the most common objection from teachers, however, involves the apprehension some feel about the downgrading effects they believe STW might have on the schools' academic programs. Curriculum directors, in their interviews with us, spoke often about this objection, and it is emphasized as a serious problem in a recent evaluation of STW in Milwaukee (Wilson et al., 1997, pp. II-4 and II-5). The serious problem implied in this characterization (it was echoed in various formulations by some curriculum directors) is that the teachers in question do not fully understand STW, that they are confused, or that, owing to their academic interests, they are unduly rigid in their thinking about it.

...career planning activity had been inhibited in some schools by negative perceptions from staff, parents, and community members...

This readiness to assume that STW critics are a sadly mistaken lot reveals an attitude that has on some occasions been off-putting to parents, teachers, and other interested parties who have expressed reservations about or objections to the STW idea. It is an us-against-them attitude, a sense that the STW cause pits professional educators against a host of others who are too ill-informed or too set in their ways to get on board and support the STW program. It is the professional's responsibility then to try to bring these people around to a correct view, according to the STW outlook. The responsibility includes staff development work aimed at helping teachers overcome what are said to be their misconceptions, but it extends to other tasks as well. Parents might need help, too. Some of our middle school parents aren't very supportive, one curriculum director stated in an interview, in reference to a STW course focused on career planning, but we're working on them. Even school board members — ostensibly the governing authority at the district level — might be found in need of special training. Evaluators of the MPS STW program stated that the [MPS]School Board needs to be convinced of the value of STW. However, the capacity to understand educational reforms [such as

STW] needs to be built. [The evaluators suggest] some requirement to learn about educational reforms for persons who get elected to the School Board (Wilson et al., 1997, p. V-15).

The task of overcoming resistance becomes more challenging to the extent that the STW program in question is broadly conceived and aggressively promoted as an omnibus reform. When the goals are inflated to utopian proportions, then every problem gets cast as a STW problem, and the work to be done in the name of STW has no focus and no end (cf. Wilson et al., 1995, ch. V, in which the age-old issue of parental involvement is analyzed as a STW problem). When the means of achieving STW goals are said to require modes of practice that have failed on their own merits to gain widespread adoption, then rational skepticism must be overcome by admonition. And when bureaucratic voices speak sternly about the many things that **must** be done, to ensure that **all** will be involved, then STW enthusiasm generates its own antagonists.

More is at stake here than niceties of tone or sensitivity. The tension that arises when parental aspirations seem to clash with STW goals reflects a condition of policy incoherence. At the same time that the U.S. Department of Education continues to support STW activity on the grounds that the public interest would be better served if more young people would pursue technical training rather than college or university enrollment, it also supports programs (the Reauthorization of Higher Education Act, for example) designed to encourage college and university enrollment by reducing the direct costs of enrollment for students and parents. The state of Wisconsin, similarly, spends large sums to support the University of Wisconsin System, in order to control enrollment costs (state appropriations for FY 1998-99 increased by four percent). When UW System enrollments fall, as they did between 1988 and 1994, campus administrators lose no time wondering whether the downturn might in fact serve the public interest. They make it their urgent business to find out what the problem is and to try to correct it.

In this manner, the reform helped to create a climate that discouraged serious academic work.

Accordingly, whatever the merit might be in analyses suggesting that too many parents and teachers push too many young people toward college enrollment (see, e.g., Gray & Herr, 1995), people who endorse that view merely poke at the fire from the top when they respond by trying to coax skeptical parents and teachers to get on board with STW. If they really were serious about changing college and university enrollment trends, they would bend their efforts to attacking the well established, politically popular incentives that bolster those trends.

As for academic teachers' balking at STW, their response also raises an implicit issue of policy incoherence. K-12 academic teachers frequently find themselves subject to widespread criticism for the low levels of academic learning many American students attain in the course of their K-12 schooling. Teachers are admonished by community members and legislators to do better, and state policies — e.g., Wisconsin's standards and assessment program — are developed to hold them accountable for improvement.

But teachers work in an environment shaped by previous traditions of reform, including especially the one that unfolded after World War I, when schools influenced by Progressive doctrines turned increasingly toward curricula expanded by an infusion of practical and vocational courses on the assumption that that expansion of offerings would enable educators to secure commitment from an increasingly large and diverse student population. It was a vision that combined deep pessimism about most students' academic capacities with high optimism about schools' capacities to do good (Powell, Farrar, & Cohen, 1985, p. 260). In its emphasis on themes or topics rather than disciplinary learning, and on activities and projects rather than verbal or quantitative analysis, it channeled efforts to improve teaching into a dangerous path. Instead of encouraging teachers to focus on improving pedagogy in serious subjects, the revolution tied better teaching to relaxed academic requirements and to the development of the practical aspects of academic subjects (Powell, Farrar, & Cohen, 1985, pp. 253-254). In this manner, the reform helped to create a climate that discouraged serious academic work.

Academic teachers today live with this legacy, and it gives them reason to be skeptical about initiatives that threaten to extend its reach and strengthen its grasp. Recurring advocacy for integrated, thematic teaching, for example, is sustained by the legacy of Progressive doctrine, not by evidence that students learn better in coursework in which disciplinary instruction is eclipsed. The integrated teaching idea itself stands up poorly to analysis (see, e.g., Fish, 1994; Lederman & Niess, 1997), and even in the middle schools, where its implementation has been strongly

endorsed by educators in leadership positions, its weak effects on learning have now begun to call it into disfavor (Bradley, 1998). By contrast, disciplinary instruction combined with a system for externally administered examinations has been shown to have powerful effects on achievement, even when students' family backgrounds are taken into account (Bishop, 1998). In the context of this tension between academic expectations, on the one hand, and a tradition of practice ambivalent in its support of those expectations, on the other, it is not surprising that some Wisconsin teachers, admonished to embrace integrated teaching in the name of STW, have found the admonition to be ill-advised and intrusive (Mason & Thorn, 1997, pp. 27-29).

It is true that some STW proponents had envisioned new forms of integrated or problem-oriented teaching for inclusion in STW programs. The new dimension was to be derived from new ideas about situated learning, as disclosed in research about learning as it occurs in workplace settings. The theory of situated learning, it was believed, would guide K-12 educators in their development of new forms of apprenticeship learning, including *cognitive* apprenticeship learning, thus strengthening academic programs as well as work-related programs.

But how likely was it that K-12 teaching and learning might actually have been reformed by applications of the situated learning idea, encouraged by STW? Taken very generally, the situated learning idea would present no new challenge for K-12 educators. They would point out that certain school routines and day-to-day instructional practices — emphasizing the importance of good work habits, basic skills, and the soft skills of cooperation and communication — already reflect attention to workplace priorities (and they would be right about that; cf. Meissner et al., 1998, p. 24). But if the situated learning idea meant more than that — if it implied that educators in search of reform should change their work environment and their practices profoundly, adapting them in specific ways to the external circumstances of the workplace — then the potential of the idea to inform classroom practice was negligible from the outset.

The difficulties become clear as soon as one considers specifically what might be involved in real cases. Could K-12 teachers in fact simulate — not once or twice, but as a matter of course, and across the curriculum generally — the situation-specific tasks involved, say, in writing and producing a technical manual on the uses of electronic controls in fluid power manufacturing, or in carrying out market research for a new mutual fund, or in doing an environmental impact analysis related to the proposed construction of a new hospital or football stadium? Could they simulate the market forces that induce people in the private sector to undertake such projects and to complete them on time and under budget? Or could they — shifting over cognitive apprenticeship activity in academic domains — effectively simulate in classrooms the work done elsewhere by editors, economists, translators, microbiologists, cartographers, and geologists? Jerome Bruner (1960) and others associated with the structure of the disciplines movement in the 1960s had advocated exactly that conception of academic work for K-12 students, and the many curricular projects undertaken to develop Bruner's conception also drew support from federal funding; yet the cumulative efforts of many talented people, brought to bear on the task, did not come close to transforming school programs.

Could K-12 teachers in fact simulate ... the situation-specific tasks involved in writing and producing a technical manual...

What would be different this time around? What new steps would educators take to ensure that instruction guided by the situated learning idea would differ qualitatively from the instruction emphasizing problems and group projects that teachers had used routinely, to little effect, since the dawn of the Progressive era? Why might teachers succeed now, where others had failed, in using relevance and authenticity as touchstones for new programs that would foster high levels of learning in history and chemistry, in mathematics and literature?

Perhaps the situated learning idea could have served as the wellspring for a distinctly new STW approach to teaching and learning in K-12 programs. It could have done so, however, only if it had first been developed in ample, concrete detail and had then been introduced systematically to teachers — initially, perhaps, in carefully controlled pilot programs and then, as warranted by early results, statewide. Teachers called upon to do distinctly new things with the idea then might have moved forward without being stymied at the outset by basic problems of interpretation and application. But as STW unfolded in Wisconsin, the situated learning idea was not developed in ample, concrete detail, nor was it presented systematically — by the DPI, for example — to teachers as a necessary condition for the STW initiative. Not one of the curriculum directors interviewed for this study mentioned it (or any other distinct conception of curricular design for STW).

It was thus a foregone conclusion that nothing new would come of the claims that STW would foster a general reform in K-12 teaching and learning. Absent any definite curricular program to give them substance, the claims would be understood among K-12 educators as slogans — received with approval by those already inclined toward the tradition of non-disciplinary project activity the slogans implied, and dismissed as a nuisance by those oriented to disciplinary teaching and learning.

These unintended consequences — the generation of antagonism and cynicism among parents and teachers, the recycling of a tired orthodoxy under a new name — have not arisen as an inevitable concomitant of the STW idea. They could have been avoided. Few parents or teachers would have found reason for objection if the DPI and the DWD had endorsed a more focused, less grandiose STW idea. Most would have seen it as a good thing if Wisconsin's educators had affirmed, as one goal among others, an on-going commitment to helping young people get ready to earn a living. The commitment would involve maintaining and improving K-12 academic programs, so that students choosing to do so could pursue their work-related goals by qualifying for admission to appropriate college and university programs. It also would involve maintaining and improving work-related courses geared to post-secondary training requirements, so that students choosing to do so could make a smooth transition to advanced technical studies at technical colleges. And it would involve maintaining and improving certain work-based programs — apprenticeship and co-op programs — so that those students choosing to do so could spend time during their last two years of high school in an interesting workplace setting, learning worthwhile skills and getting paid for it. But STW in this sense would not have required institutional endorsement of an inflated ideology, or a leviathan bureaucracy to sustain it.

CONCLUSION

Judged by reference to the two problems that prompted its devising, STW in Wisconsin has produced meager results. It has had no identifiable impact on the academic learning of K-12 students in Wisconsin, and it has involved too few students in its core, work-based learning activities to register a significant aggregate impact on Wisconsin's workforce.

In addition, in the time it has taken the state to implement STW, the circumstances in which it was devised have changed markedly. A strong economic recovery in the state and a tight labor market now imply workforce development priorities that reach far beyond STW. The K-12 schools problem also has changed. Wisconsin now has put a new set of curricular standards in place for the K-12 schools, along with a new assessment system geared to the standards. As this initiative develops, it will drive efforts by K-12 educators to improve programs for academic learning. STW has not informed those efforts to date in the way its proponents claimed it would, and it is unlikely to do so in the future; it scarcely could, since it is not aligned with the standards and assessment system and it has not generated an assessment system of its own to provide information about the effects of STW on learning.

These meager results might seem to be surprising, given the fanfare that accompanied STW at the outset and the resources it has consumed since 1991. But in fact STW never had a chance to deliver on the inflated claims made by proponents on its behalf. It was an academic program launched without a curriculum to give it substance; it was a workforce development program too blurred in its focus and too limited in its output to have strong aggregate effects; and it came with an attitude that provoked antagonism among some of those — parents and teachers — whose support would have been critical to its success.

RECOMMENDATIONS

We address the following recommendations to interested citizens of Wisconsin, including, of course, K-12 educators and policy makers. The recommendations capture much of what can be learned from Wisconsin's experience with STW to date. We believe they might inform STW policy at the state level and STW program development at the district level. Our first recommendation proposes a threshold evaluation at the state level to determine whether STW merits continuation. Our subsequent recommendations pertain to STW activity as it might be undertaken in the event of a decision to continue the program in a new manner.

1. Wisconsin's Legislative Fiscal Bureau should evaluate the STW program in light of STW program goals and other state priorities, pursuant to a zero-base budget decision about program continuation. STW costs look high; the benefits look meager. Moreover, the program operates outside Wisconsin's standards and assessment system, lending de facto support to a line of opposition to the reforms that that system is intended to bring about. Formal consideration of these problems is overdue.

2. At the district level, do it small. Some school districts in Wisconsin have gone father than others in making STW central to their mission, but STW generally has not served well as a dominant scheme for organizing and shaping district-level activities comprehensively. Emphatic declarations about the capacity of STW to attack all problems for all students turn out upon examination to be hyperbolic, at best, as well as misleading and divisive. The familiar problem of scarcity also bears on this point. The state of Wisconsin has spent $195 million on STW since 1991, and, while STW participation has shown some growth during that time period, it remains true that only a small percentage of students has been involved in the work-related learning activities that are the core of STW. Scaling it up — extending the reach of STW so that it might in some non-trivial sense shape the K-12 experiences of **all** students, as many have urged — would require an infusion of additional resources, a consensus about how those resources should be used, and a capacity to mandate compliance that simply will not be forthcoming. It is time to scale it down instead. The interest educators have in representing themselves as credible professionals argues for a candid endorsement of STW as one program among others in the districts' respective sets of offerings — one program potentially valuable to some students.

3. Emphasize articulated technical studies and work-based learning. The impulse to do everything via STW, or to claim a goal of that sort on its behalf, vitiates the STW idea at its core, making it compatible with nearly any school practice and, therefore, distinctive of none. Many school-based learning activities carried out in the name of STW (field trips to the zoo or the fire station to learn about careers involving animal care and public safety; a unit on group discussion, because many people in the business world work in teams) have been staples in school programs for a long time, and educators would continue to rely on them even if STW were to be discontinued tomorrow. But articulated technical studies, and apprenticeship and co-op work experiences, help students to connect with a world of norms and practices *outside the K-12 world,* and it is this connection to the outside that creates the STW potential for adding value to the K-12 experience. Students, employers, and parents have responded favorably thus far to the connections of this sort that STW has fostered. STW programs should hold fast to these work-related sources of strength and strive to learn more about optimal uses of them.

4. Protect the academic curriculum. Nothing about the STW idea requires disparagement of academic learning. The edginess or antagonism that can sometimes be observed now in relations between STW advocates and others interested in disciplinary learning reflects a tradition in American education that predates STW and has no necessary connection to it. Disciplinary learning requires a curriculum and a program of instruction and assessment oriented without apologies to academic goals. If courses oriented in this direction are poorly conceived and poorly taught, they will bore students, just as poorly conceived and poorly taught non-academic courses always have bored students consigned to the low-track dumping grounds. If incentives related to higher education and employment provide no reason for students to work hard at learning, some will choose not to work hard, in academic and non-academic courses. It is program quality and incentives for learning that matter. Schools never have solved the problem of what to do with disaffected students by turning away from academic goals. It is no time now to recapitulate failed efforts.

5. Build STW activity into an evaluation plan, not merely an implementation audit. Outsiders who look on and compare K-12 program development with large-scale projects initiated elsewhere find it hard to understand why educators undertake their large-scale projects without first conducting research to verify the suppositions on which the projects are based. The importance of developing and testing a program before implementing it seems especially obvious when the program in question will affect dependent minors, required by law to be in attendance. It is not possible to recapture the forgone opportunity for developing a STW evaluation plan early on — i.e., one that would at the outset have identified well-defined STW program features, seen to their implementation on a small scale, monitored the trials closely, and taken stock of the results in order to make informed decisions about the next steps. But school districts could begin *now* to approach STW in that way, and the state could provide technical assistance and incentives to expedite their efforts and to disseminate useful analyses of them. Students would benefit from the effect that research and development activity of this sort would be likely to have on program quality, and the public would benefit from insights gained about which STW activities were more and which ones less deserving of continued support.

6. Take people's objections seriously and try to learn from them. School attendance for minors is mandatory in the United States, but teachers know well that students comply or decline to comply with school requirements according to their own judgment in the matter at hand. Increasingly, it is the same with parents; many of them have exit options by means of which they can move away from school environments that fail to satisfy them, and those who do not exercise exit options often exercise voice instead, to good effect. It is futile, accordingly, to try to impose

school programs for which there is no strong consensus among the people those programs are intended to serve. In fact, stripped of utopian attributions and initiated without bossy pretense, STW seems generally to be well received in Wisconsin's school districts. But when teachers report, say, that certain STW practices aren't worth the time and trouble they require, or when parents and high school teachers question whether it really is possible to prepare children for learning algebra by means of middle school projects featuring simulated exercises in the management of travel agencies or tattoo parlors, it would be a good thing to hear them out, not to assume that they are ill-informed or temperamentally opposed to innovation. More than courtesy or public relations is at stake; schools that close themselves off against information are apt to stagnate, and they court rejection by the people whose support they depend upon.

7. Let demand for STW services drive expansion of STW programming. Implementation and evaluation studies carried out to date emphasize the relative ease with which many STW efforts got started — involving some teachers, some students, and some employers working together on well-defined STW tasks. The serious difficulties, the ones that frustrate STW educators in leadership positions and irritate educators and parents on the receiving end of the hard sell, have to do with attempting to extend STW into all aspects of school programming, engaging all teachers and administrators and students, and drawing support from businesses, unions, churches, universities, and other community groups and agencies. As opposed to these quixotic efforts, we recommend that STW educators concentrate instead on developing excellent, sharply focused STW programs — ones so thoughtfully conceived, so clearly described, and so well delivered that some people will want more of them. Then STW programs may expand legitimately and without a struggle, in response to demand.

REFERENCES

Beemiller, R. M., & Downey, G. K. (1998, June). Survey of current business: Gross state product by industry, 1977-96. U. S. Department of Commerce: Bureau of Economic Analysis. www.bea.doc.gov/bea/pubs.htm.

Best-Louther, M. J. (n.d.; ca. 1994). *Wisconsin's school-to-work program*. Madison, Wisconsin: Department of Public Instruction.

Bishop, J. H. (1998, Spring). The effect of curriculum-based external exit exam systems on student achievement. *Journal of Economic Education,* 171-182.

Bishop, J. H. (1989, January-February). Why the apathy in American high schools? *Educational Researcher*, 6-10.

Boyer, E. L. (1983). *High school: A report on secondary education in America*. New York: Harper & Row.

Bradley, A. (1998). Muddle in the middle. *Education Week*. [On-line] Available: www.edweek.org/ew/vol17/.

Brown, J. S., Collins, A., & Duguid, P. (1989, January-February). Situated cognition and the culture of learning. *Educational Researcher*, 32-41.

Bruner, J.S. (1960). *The process of education*. New York: Vintage.

Commission on Schools for the 21st Century. (1990). *A new design for education in Wisconsin*. Madison, Wisconsin: Wisconsin Department of Administration.

Commission on the Skills of the American Workforce. (1990). *America's choice: High skills or low wages!* Rochester, New York: National Center on Education and Employment.

Curriculum directors in 45 Wisconsin school districts. (1998). Interviews.

Department of Workforce Development. (1997, March). *Follow-up survey of the 1995 youth apprenticeship graduates*. Madison, Wisconsin: Author.

Fish, S. (1994). Being interdisciplinary is so very hard to do. In *There's no such thing as free speech* (pp. 231-242). New York: Oxford.

Glover, R. W., & Marshall, R. (1993). Improving the school-to-work transition of American adolescents. *Teachers College Record, 94* (3), 588-610.

Goodlad, J. (1983). *A place called school*. New York: McGraw-Hill.

Governor acts now to build tomorrow's workforce. (1998, October 29). www.dwd.state.wi.us/notespub/DWDWebMa/314a 536.htm

Gray, K. C., & Herr, E. L. (1995). *Other ways to win: Creating alternatives for high school graduates*. Thousand Oaks, California: Corwin.

Heckman, J. J. (1994, Spring). Is job training oversold? *The Public Interest,* 91-115.

Hofstadter, R. (1963). *Anti-intellectualism in American life*. New York: Knopf.

Jackson, P. W. (1981). Secondary schooling for the children of the poor. *Daedalus, 110* (4), 39-57.

BEST COPY AVAILABLE

Krug, E. A. (1969). *The shaping of the American high school: 1880-1920.* Madison, Wisconsin: The University of Wisconsin Press.

Lederman, N. G., & Niess, M. L. (1997). Integrated, interdisciplinary, or thematic instruction? Is this a question or is it questionable semantics? *School Science and Mathematics, 97* (2), 57-58.

Lerman, R. I., & Pouncy, H. (1990, Fall). The compelling case for youth apprenticeships. *The Public Interest*, pp. 62-77.

Mason, S. A., & Thorn, C. A. (1997). *Wisconsin school-to-work implementation: A study of enacted practices, 1996-1997.* Madison, Wisconsin: Center on Education and Work.

Meissner, D. G., Browne, J. C., Van Dunk, E., & Reichgelt, R. J. (1998, September). *The economic impact of work-force diversity*. Milwaukee, Wisconsin: Metropolitan Milwaukee Association of Commerce.

Milwaukee Public Schools. (1997). *School to work and your child.* Milwaukee, Wisconsin: Author.

Olson, L. (1997). *The school-to-work revolution.* Reading, Massachusetts: Addison-Wesley.

Phelps, L. A., Scribner, J., Wakelyn, D., & Weis, C. (1996, November). *Youth apprenticeships in Wisconsin: A stake-holder assessment.* Madison, Wisconsin: Department of Workforce Development.

Phelps, L.A., & Fulton, D. V. (1997). *Follow-up survey of 1996 youth apprenticeship graduates*. Madison, Wisconsin: Department of Workforce Development.

Phelps, L. A., & Jin, M. (1997). *1997 Wisconsin youth apprenticeship employer survey*. Madison, Wisconsin: Department of Workforce Development.

Powell, A G., Farrar E., & Cohen, D. K. (1985). *The shopping mall high school.* Boston, Massachusetts: Houghton Mifflin.

Resnick, L. B. (1987, December). Learning in school and out. *Educational Researcher*, 13-20.

Resnick, L. B., & Wirt, J. G., Eds. (1996). *Linking school and work: Roles for standards and assessment.* San Francisco, California: Jossey-Bass.

School to Work Transition Task Force. (1993). *School to work: Learning for life.* Milwaukee, Wisconsin: Author.

Sharma-Jensen, G. (1998, June 24). Forum suggests more tech-school subsidies. *The Milwaukee Journal Sentinel*, 8.

Shively, N. H. (1992, April 27). Changes loom in way workers are educated. *Milwaukee Sentinel*, 1A, 4A.

Testa, W. A., Klier, T. H., & Mattoon, R. H. (1997, April). *Assessing the Midwest economy: Looking back for the future*. Chicago, Illinois: Federal Reserve Bank of Chicago.

U. S. Congress. (1994, May 4). *School-to-Work Opportunities Act of 1994*. Public Law 103-239. www.stw.ed.gov/factsht/act.htm

U. S. Department of Labor. The Secretary's Commission on Achieving Necessary Skills. (1991). *What work requires of schools: A SCANS report for America 2000.* Washington, D. C.: Author.

Western, R. D. (1998). Workforce 2010 follow-up study. Port Washington, Wisconsin: Port Washington-Saukville School District.

Williams, J. (1998, June 16). School-to-work reforms committee disbands. *Milwaukee Journal Sentinel*, 7B.

Williams, J., & Held, T. (1998, December 2). New tech school plan takes shape, sources say. *Milwaukee Journal Sentinel*, 1A, 9A.

Wilson, C. L., Powell, J., Kelly, F., Faltz, C., Shield, P. M., Marder, C., & Padilla, C. (1995). *Evaluation of Milwaukee's School to Work implementation plan: Phase 1 final report.* Menlo Park, California: SRI International.

Wilson, C. L., Padilla, C., Powell, J., Faltz, C., Robertson, S. R., Hawkins, E., Valdez, K., Marder, C., Scribner, J. P. (1997). *Evaluation of School to* Work *in Milwaukee: Phase 3 final report.* Menlo Park, California: SRI International.

Wisconsin Department of Public Instruction. (1997). *Raising the performance expectations for all Wisconsin students: Developing standards for school* districts. Madison, Wisconsin: Author.

Zehr, M. A. (1998, December 2). School-to-work movement faces test, study says. *Education Week*, 1, 29.

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APPENDIX

Curriculum directors from the following Wisconsin school districts participated in telephone interviews for this study:

Algoma School District
Antigo School District
Argyle School District
Barron Area School District
Beloit Turner School District
Clayton School District
Clinton Community School District
Clintonville School District
De Forest Area School District
Elk Mound Area School District
Fall Creek School District
Fort Atkinson School District
Fox Point School District
Freedom Area School District
Goodman-Armstrong School District
Green Bay School District
Howard-Suamico School District
Hustisford School District
La Farge School District
Maple Dale-Indian Hill School District
Mauston School District
Melrose Mindoro School District
Menomonie Area School District
Milton School District
Minocqua School District
Monona Grove School District
Neillsville School District
New Berlin School District
North Crawford School District
Omro School District
Onalaska School District
Port Washington School District
Pulaski School District
Racine School District
Sevastopol School District
Sheboygan Falls School District
Shorewood School District
Slinger School District
St. Francis School District
Tigerton School District
Tomah School District
Trempeleau Valley School District
Waukesha School District
Wausau School District
West Salem School District

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The **Wisconsin Policy Research Institute** is a not-for-profit institute established to study public-policy issues affecting the state of Wisconsin.

Under the new federalism, government policy increasingly is made at the state and local levels. These public-policy decisions affect the life of every citizen in the state. Our goal is to provide nonpartisan research on key issues affecting Wisconsinites, so that their elected representatives can make informed decisions to improve the quality of life and future of the state.

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